COLONY OF MAURITIUS

Annual Report

OF THE

Medical and Health Department

1957

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PRINTED AND PUBLISHED BY
J ELIEL FELIX, I.S.O., GOVERNMENT PRINTER,
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PART I

General Review

The Island lies between latitude 19°50 and 20°31 South and longitude 57°18 and 57°48 East of Greenwich. The total length North to South is nearly 39 miles and its breadth East to West is 29 miles. The area of the island is 716 square miles and that of the islets round the coast 4 square miles, making a total of 720 square miles (460,800 acres). The ground rises to an elongated central plateau, lying roughly North-South,the altitude of which above sea level is 1,800—1,900 feet. It is bounded on the North, East and South West by abrupt and broken Mountain ridges. On the South and South East it slopes gradually to the sea. The highest mountain peak is 2,711 feet.

2. Although Mauritius lies just within the tropics, its climate is on the whole comparatively mild and equable. There are, however, very sensible variations of climate in the different parts of the island. The maximum shade temperature recorded on the northern plains (180 feet above sea-level) has never exceeded 95°F (35°C) and over the central tableland (1,800 feet) the maximum seldom reaches 80°F (27°C) but the high relative humidity renders the heat oppressive at certain times of the year and causes considerable discomfort, especially in the lowlands. For the same reason, the winter in the highlands is uncomfortable, though the temperature never falls below 70°F (21°C).

3. Rainfall is abundant, but varies considerably in different parts. The annual mean varies from less than 30 inches on the north and west coast to 150 inches in parts of the central plateau, where in some years the rainfall has been known to reach nearly 200 inches. Tropical cyclones are frequent in the vicinity of the Island during the summer months (December to April) and have at times caused considerable damage to crops, trees and structures, and on rare occasions, even loss of life. The last cyclone to pass over Mauritius was in 1945, when wind forces of about 100 miles per hour were experienced.

The following notes summarize the main weather features for the year 1957 :—

(a) Cyclones.—No cyclones affected Mauritius in 1957.

(b) Rainfall.—Amounts were low in January, February and March during which there was, for the island as a whole, a deficit of $10\frac{1}{2}$ inches from the normal 34 inches. April was slightly wetter than usual and May and June slightly drier. The winter and autumn months were dry : an average of only 10 inches of rain fell from July to October. In November the fall was only about half the normal. The reservoirs were replenished in December when an excess of about 40 per cent of the normal was recorded. The total rainfall of the year was 80 per cent of the normal.

(c) Temperature and Sunshine.—Mauritius has an oceanic climate and variations of temperature from the seasonal normal are usually small. In 1957, February and April were somewhat cooler than usual, and from July to the end of the year, the maximum dry temperatures were generally a little higher than normal. In July and August in particular the trade winds were weaker than normal and conditions were much less wintry than could be expected.

The duration of bright sunshine was about 4 per cent greater than normal for the whole year. Departure from normal in any one month was not great, except in January and October when the excesses were 25 per cent and 20 per cent respectively.

(d) Humidity.—Relative humidity was 1.3 per cent above normal for the whole year, the wettest month being February with mean of 89 per cent above the normal for that month.

5. The population lives mainly on the proceeds of sales of its sugar : the whole economy being at present dependent on this single crop which constitutes some 97 per cent of the domestic exports. The shortage of rain in certain areas during 1957 affected the sugar crop but the effects were in part offset by record crops in other areas, a slight increase in the acreage under cane and a high extraction rate. The 1957 crop is estimated to have produced 561,500 metric tons, a production second only to the 1956 record of 572,512 tons.

The most recent plan concerned with the development of the Colony's resources has taken into account an appreciable extension of the tea industry and this project, when completed, should naturally strengthen the economy of the island. The bulk of the food required continues to be imported as Mauritius produces, apart from vegetables and fruits, insignificant quantities of rice, maize, potatoes and other root crops.

6. In relation to its resources, Mauritius is overpopulated. The density of population in the towns and in some villages is very large and matches that of some of the most densely populated regions of the world. The population, which is now well over three times what it was a century ago, has increased from 405,020 in 1939 to 596,600 in 1957.

7. During the year the Colony has received valuable assistance from the World Health Organisation which sent teams to conduct surveys in turberculosis incidence and nutrition. An agreement has been entered into with the United Nations International Children Emergency Fund who will provide means of extending existing maternity and child welfare schemes throughout the Island.

8. Development and expansion of the hospital services continued without break in 1957 :—

2 additional wards—Orthopaedic Hospital
Combined Dispensary and quarters at Piton
3 garages at Rose Hill
1 Store at Orthopaedic Hospital

were completed.

An administrative and outpatients' block at the Civil Hospital in Port Louis was nearing completion at the end of the year. The additional 60—bed ward at the Mental Hospital and the ophthalmic unit at Victoria Hospital, as well as a new 90-bed hospital in Rodrigues, had reached an advanced stage of construction. The construction of a school for the training of nurses and deep X-Ray therapy unit at Victoria Hospital and additional quarters for medical staff were put in hand during the year. The construction of a new central laboratory for the Medical Department has begun.

9. The institutional facilities which were available in 1957 are tabulated hereunder :

	No.	*Beds*
(a) Government Institutions :—		
1. General Hospitals	8	1,202
2. Dispensaries (including 2 in the prisons) ...	48	—
3. Specialized units :—		
(i) Maternity and Child Welfare Centres	9	—
(ii) Maternity wards in hospitals	8	—
(iii) Leprosarium	1	62
(iv) Mental Hospital	1	707
(v) Orthopaedic Hospital	1	157
(vi) Prisons Hospitals	2	46
4. Mobile Units :—		
(i) Dispensaries	4 units	
(ii) Ante-natal Clinic	1 unit	
(iii) Dental Clinic	2 units	
(b) Private Institutions :—		
1. Sugar Estates' hospitals	33	738
2. Sugar Estates' Dispensaries	8	—
3. Nursing Homes	5	53

10. There are 37 dispensaries in the rural areas. In addition a Mobile Dispensary service comprising four units caters for the needs of scattered villages and hamlets where it would be uneconomic to provide a static out-patient service.

11. There are 17 maternity and infant welfare centres, and regular clinics are held at each of these. This service is supplemented by a mobile unit which visits a large number of localities in the rural districts.

12. The figures given hereunder show the increase in the demands made on the services provided :—

Year	*Estimated mid-year population*	*Admissions to Hospitals*	*Surgical Operations*		*Attendance*		*Examinations made at the Central Laboratory*
			In-patients	*Out-patients*	*Static*	*Mobile*	
1953 ...	516,525	31,909	6,547	20,833	399,899	111,849	54,251
1954 ...	530,461	31,048	7,815	22,550	402,136	118,912	65,060
1955 ...	549,094	29,383	7,655	26,537	457,114	92,149	62,575
1956 ...	568,886	30,971	5,951	33,593	501,072	81,822	75,700
1957 ...	587,018	33,335	11,015	27,942	612,140	77,561	125,465

13. Medical and Health Staff in 1957 :—

	Government	*Private*
1. Registered Medical Practitioners ...	60	61
2. Dentists	4	25
3. Pharmacists	2	45
4. Nurses of senior training	10	—
5. Nurses in hospitals	176	—
6. Dressers in hospitals	217	—
7. Midwives (all categories)	64	—
8. Sanitary Inspectors	59	—
9. X-Ray Specialists	2	—
10. X-Ray Technicians	5	—

The increase in the Staff in 1957 comprises 5 Medical Practitioners, 2 Nurses of Senior training, 20 Nurses, 10 Dressers and 10 Midwives.

14. Anæmia and malnutrition continue to be one of the most serious public health problems in Mauritius. Following the visit in 1955 of Professor A. W. Woodruff, F.R.C.P., of the London School of Tropical Medicine and Hygiene, the World Health Organisation is providing technical assistance to enable the local nutrition problem to be fully investigated.

15. Tuberculosis is another problem which is coming with increasing prominence to the fore. During the year under review, the anti-tuberculosis work of the Health Department continued to expand, and a World Health Organization team carried out a tuberculin sensitivity survey from a randomly selected sample of villages. Preliminary results confirmed previous findings that the frequencies of infection are higher in the capital than in the villages, with some indication that the frequency of infection increases with the size of villages. Preliminary findings showed that the pattern of tuberculin sensitivity in Port Louis and in the village populations is essentially the same : the prevalence of tuberculous infection increases with age, especially during adolescence, and is consistently higher in males.

16. It is expected that further assistance will be given in 1958 by World Health Organisation in the form of specialised staff and equipment.

17. A problem which has received a solution under the Capital Expenditure Programme is that of improved water supplies, one of the basic requirements of public health anywhere. By the end of 1958, the whole of Mauritius will be supplied with filtered and chlorinated water and in addition, and approval has been given to a proposal for the fluoridation of water. To start with, a pilot scheme will be operated. Fluorine will be added to the extent of 0.6 p.p.m. to one of the supplies delivering 5,000,000 gallons of water daily and the effects on the dependent population will be closely watched.

18. The year under review was favourable in regard to the incidence of infectious diseases. The only epidemic manifestation was an outbreak of Asiatic influenza in August and September, which was partly responsible for the slight increase in the mortality rates.

19. No cases of quarantinable diseases have occurred for a considerable time, but, as pointed out in previous years' reports the frequency and speed of international traffic necessitate the maintenance of a well-organised port and airport health service to watch at the gates of the island. Malaria having now been mastered, and *Aedes ægypti* to all evidence completely eradicated, the quarantine service maintains constant vigilance to ensure that these insects are not re-introduced nor new insect vectors imported.

20. A voluntary vaccination campaign against poliomyelitis was started. More than 60,000 children of five years and under were vaccinated free of charge at hospitals and dispensaries all over the Island.

21. The main duties of the School Health Service which looks after about 89,000 school children are to examine new entrants and leavers, children previously found defective and special cases referred by the teachers. The closest cooperation exists between the staff of the School Health Service, the teaching staff and the parents of school children, with the pleasing result that the state of cleanliness of the pupils has appreciably improved. The maximum attention possible continues to be paid to the personal hygiene and nutrition of the school child and the environment of the schools. In particular, it is not yet possible to give to individual pupils all the attention one would wish. A school travelling dispensary administers minor treatments in rural areas. All primary school children receive a daily ration of sugared skimmed milk flavoured with cocoa ; cases recommended by a Medical Officer get an increased ration of milk and / or additional nutrients such as yeast, Vitamin A plus Vitamin D Capsules and iron.

22. The Dental Service concentrated on the policy of directing most of its effort to work on school children and whenever possible, provided this was not detrimental to the School Health Service, preventive dentistry was offered to a number of expectant and nursing mothers. In addition, one of the Mobile Clinics gave dental attention on Saturdays, when the schools are closed, to the chronic sick at the Mental Hospital and at the Princess Margaret Orthopædic Centre.

23. Expansion of the Maternal and Child Health Service has continued despite staff difficulties. More assistance was given through the various static centres, the mobile units, the hospitals and the domiciliary midwifery service.

24. *Finance.*—The expenditure on Medical Services for the financial year 1956–57 was Rs 11,045,710 or 10.09 per cent of the total expenditure on all Government Services for the same financial year, which amounted to Rs 109,504.973.

This represented a sum of Rs 19.07 per head of the estimated population at 31st December.

25. *Legislation.*—The following measures affecting the work of the department were finalised and became law during the year under review ;—

(a) The "*La Clinique Mauricienne*" Ordinance (No. 36 of 1957) to establish "*La Clinique Mauricienne*" and to provide for the incorporation and management thereof.

(b) The Education Ordinance (No. 39 of 1957) to consolidate and amend the law relating to education.

(c) The Lunacy (Amendment) Ordinance (No. 41 of 1957) to bring up to date the legislation concerning Lunacy.

Government Notices of Public Health interest were the following :—

(a) Bread (Control and Manufacture) Order (No. 5 and No. 61 of 1957).

(b) Food and Drugs (Preservatives in Food) Regulations (No. 77 of 1957)

(c) Lunacy (Amendment) Regulations (No. 49 of 1957)

(d) Poliomyelitis Vaccination Campaign-Statistics-Regulations (No. 59 of 1957)

(e) Quarantine (Amendment) Regulations (No. 42 and 57 of 1957).

26. Among the distinguished visitors we had the pleasure to welcome were :—

Mr. J. D. Profumo, O.B.E., M.P., Parliamentary Under Secretary of State for the Colonies.

Mr. H. P. Hall, M.B.E., Head of the Pacific Department of the Colonial Office.

Dr. H. Bloch, Consultant of the World Health Organisation.

27. *Honours.*—Her Majesty the Queen was graciously pleased to approve the following awards on the occasion of the New Year and on Her Birthday :—

To be Commander of the Most Excellent Order of the British Empire : Joseph Antoine René Lavoipierre, Director of Medical Services.

To be Officer of the Most Excellent Order of the British Empire : Joseph Antoine Herman André, Deputy Director of Medical Services.

28. Voluntary workers have extended help in many ways to the Health Department and tribute is paid to the many private citizens whose contribution has been valuable. The work of the following societies and organizations is gratefully acknowledged :—

The Maternity and Child Welfare Society

The Mauritius Branch of the British Red Cross Society

The Tuberculosis Society

The St. John Ambulance Association

The Stretcher Bearers Association

The Friends of Moulin à Poudre (Leprosarium)

The Welfare of the Blind and the Prevention of Blindness Society.

PART II

Functions and Organisation of Department

29. The functions of the Medical and Health Department are :—

(a) To investigate the influence of social, environmental and domestic factors on the incidence of human disease and disability ;

(b) To plan and carry out measures for the promotion of health ;

(c) To institute and maintain measures for the prevention of disease;

(d) To provide a quarantine service to prevent the introduction of infectious disease by sea or air ;

(e) To provide facilities for treatment of disease, including mental disease, by maintenance of hospital and dispensary services ;

(f) To make provision for the rehabilitation of the disabled ;

(g) To regulate the practice of medicine, dentistry and pharmacy ;

(h) To provide facilities for the training of nurses, midwives and sanitary officers ;

(i) To advise local authorities regarding their health services and to inspect those services ;

(j) To prepare and publish reports and statistical or other information relating to health.

Administration

Staff

30. The activities of the Department are co-ordinated by the Director of Medical Services assisted by two Deputies. The official establishment staffing and operating the preventive, curative and investigative services consists of :—

3 Medical Superintendents
8 Specialists
2 Part-time specialists
2 Pathologists
2 Senior Medical Officers of Health
2 Medical Officers of Health
49 Medical Officers
3 School Medical Officers
5 Part-Time Medical Officers i/c Mobile Dispensaries
3 Temporary Medical Officers
7 Assistant Specialists
4 Dental Surgeons
2 Chemists
2 Pharmacists
1 Rehabilitation Officer
1 Principal Matron
4 Matrons
1 Superintendent of Midwives
2 Physiotherapists
1 Assistant Superintendent of Midwives
1 Assistant Matron
2 Occupational Therapists (1 vacant)
19 Laboratory Assistants (1 vacant)
480 Dressers and Nurses
79 Midwives
93 Hospital Attendants, Sisters of Mercy, Assistant Nurses, District Visitors, Village Health Workers, Radiographers
5 Senior Sanitary Inspectors
1 Port Health Inspector
1 Officer i/c Harbour Disinfecting Station
64 Sanitary Inspectors, Assistant Inspectors and Market Inspectors
2 Officers i/c Orthopædic Workshop and attendant
1 Steward Quarantine Station
1 Transport Officer
2 Storekeepers
39 Clerks and Assistant Clerks
9 Typist Stenographers
19 Secretaries (3 vacant)
1 Registrar of Health Statistics, 1 Compiler.

Malaria Organisation

1 Medical Officer of Health
1 Entomologist
1 Malaria Survey Officer
1 Field Officer and 2 Assistant Field Officers
1 Senior Malaria Inspector
3 Malaria Inspectors Grade I and II
1 Laboratory Assistant
6 Junior Laboratory Assistants.

1,998 others, including storekeepers, headmen, drivers, field workers, labourers, watchmen etc.

31. The increase in the establishment comprises 5 Doctors. 2 Nurses of Senior training, 20 Nurses, 10 Dressers and 10 Midwives, There were however a very large number of vacancies.

Training of Medical and Health Staff

32. Conditions and qualifications required are as follows :—

(a) No person may practise medicine and surgery in Mauritius unless he is the holder of either a qualification which renders him eligible for registration in the United Kingdom or a state degree in medicine delivered by any of the Faculties of France;

(b) Persons authorised to practise as pharmacists in the Colony are those possessing diplomas or certificates entitling them to practise as Pharmaceutical Chemists or Chemists and Druggists, or as Apothecaries in the United Kingdom, or possessing diplomas as chemists and druggists or pharmacists from foreign Universities or Colleges, and authorised by virtue of a commission issued to them by the Governor on the recommendation of the Pharmacy Board, to act as pharmacists in the Colony ; or persons who obtain a Colonial diploma of pharmacist under the provisions of the Pharmacy and Poisons Ordinance, 1955, and are authorised by the Governor as aforesaid, to practise as pharmacists;

(c) The conditions governing the practice of dentistry are indentical to those applicable to doctors: the majority of the dentists have qualified in the United Kingdom ;

(d) Nurses and midwives must be registered at the Medical and Health Department before being allowed to practise : only those trained in the United Kingdom and in Mauritius are eligible for registration ;

(e) Sanitary Inspectors trained in the United Kingdom or in Mauritius are employed by the Department and one local authority.

There are no facilities available locally for training doctors and dentists. Persons wishing to obtain the local diploma of pharmacist study under private tuition and have to pass an examination arranged by the Pharmacy Board under the Pharmacy and Poisons Ordinance, 1955. The training of nursing staff has since 1948 been raised to a standard much higher than that accepted in pre-war days, and the training course has been extended to three years for the General nursing certificate with an additional year for the midwifery certificate; examinations are set on a syllabus which is very similar to that of the United Kingdom. In the case of midwives, the training course extends over 18 months, one-third of that time being spent on the District Midwifery Service. After passing their final examination, nurses and midwives are generally employed by the Department where they acquire additional experience. A few resign to go into private practice or join the staff on sugar estate hospitals. Sanitary Inspectors are trained during 18 months on a syllabus similar to that of the Royal Sanitary Institute. After passing the final examination, they are all employed by the Medical and Health Department.

Abroad 9 Medical Officers obtained post graduate qualifications during the year, one radiographer, and one dresser completed their training.

Locally 13 Dressers and 15 Nurses qualified during the year and 24 candidates satisfied examiners in Midwifery.

The Pharmaceutical and Stores Section

33. Recognition must be given to the Pharmaceutical Laboratory of the Department which under the Senior Pharmacist performs work of great importance to every division of the Department. For the time being, the laboratory is temporarily accommodated at Victoria Hospital and, in view of the restricted space available, concentrates mostly on the preparation of infusion fluids and injections. Its work will be increased as soon as it can move to new accommodation which is due to become available early in 1958, and it is estimated that an important saving will be effected when the manufacturing programme can be expanded.

34. The Stores Section is in the charge of a Chief Storekeeper who is responsible for storing and distributing drugs, dressings, bedding and clothing, surgical instruments and other equipment. The Senior Pharmacist is responsible for the whole pharmaceutical service and assists the Director of Medical Services in supervising the placing of orders for drugs and special dressings.

PART III

Curative and Investigative Services

I. Hospitals

35. A summary of the distribution of public hospitals and beds is given below :—

Hospital	*Number of Beds*	
Civil Hospital, Port Louis	410	
Victoria Hospital, Quatre Bornes ...	263	
Long Mountain Hospital	66	
Poudre d'Or Hospital	70	
Flacq Hospital	111	
Mahebourg Hospital	105	
Souillac Hospital	97	
Moka Hospital	80	
	——	1,202
Special Institutions :—		
Mental Hospital	707	
Leper Settlement	62	
Orthopædic Centre	157	
	——	926
GRAND TOTAL ...		2,133

36. Several buildings are in the course of construction and plans are at an advanced stage of preparation for many others. However, encouraging future prospects are, the possibilities of architects and builders cannot yet equal the impatience of the departmental staff nor meet the increasing demands made by the public on the medical services.

37. Pending the availability of additional beds, priority continues to be given to patients requiring immediate curative treatment.

38. With the exception of the speciality of psychiatry centred on the self-contained Mental Hospital, the services of specialists are centralised at the two major centres of treatment which are the Civil Hospital in Port Louis and the Victoria Hospital at Quatre Bornes. The extensions in hand for the Victoria Hospital include an ophthalmic Unit of 30 beds with out-patient service and an operation department.

39. *Ambulance Service.*—The number of ambulances in use in the Medical and Health Department at the end of the year was 16. Three new ambulances were on order through the Public Works Department.

40. *Radiodiagnosis.*--Number of patients X-Rayed in 1957 :—

	Victoria Hospital	*Civil Hospital*
Skeleton	9,986	5,689
Chest	6,861	5,519
Abdomen (barium meals cholecystograms pregnancies etc.)	2,673	948
Urinary tract	367	109

Total number of patients examined
32,152 as against 26,424 in 1956

41. *Radiotherapy :—*

Number of patients treated in the therapy department (October to December)	46
Number of patients treated with radium (for the same period) i.e. cases of carcinoma of the uterine cervix ...	8

42. Statistics of morbidity in respect of hospitals and dispensaries for the year 1957 are shown at Part IV of this Report.

43.—(*a*) *Mental Hospital*—Accommodation is still inadequate in the male section of the hospital.

A two storied building is nearing completion which will accommodate sixty patients. Plans have been made for the construction of a block for private male patients and for an out-patient Clinic.

It is hoped that work on these extensions will start in 1958. A storey is to be added to ward No. III (for females) and the present dormitory will serve as a Day-Room.

The transfer of old chronics who do not need constant medical treatment to Poor Law infirmaries is under consideration.

(*b*) Insane population of the Colony at 31.12.1957

	General			*Indo-Mauritian*			*Chinese*			*Grand Total*		
	M	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*	*M*	*F*	*T*
At Mental Hospital (certified pts) ...	184	136	320	162	118	280	21	11	32	367	265	632
On probation ...	132	78	210	206	96	302	11	5	16	349	179	528
On leave under G.N.239/24 ...	15	14	29	15	16	31	—	1	1	30	31	61
In poor-law Infirmaries	35	20	55	33	20	53	3	1	4	71	41	112
TOTAL ...										817	516	1,333

The percentage sex distribution of the 1333 insanes is male 61.29 and female 38.71.

The admission of a fairly large number of alcoholics accounts for the higher ratio on the male side.

Seventy-one (71) patients, 46 men and 25 women, who were out on probation were found cured and finally discharged by the Central Board of Commissioners of Lunacy.

(*c*) The ratio of insanity per 10,000 population was 22.09 for the whole population. The rate for the different ethnical group per 10,000 was General population 32.05, Indo Mauritian 16.85. These figures are very interesting as most of the Indo-Mauritian live in the rural areas whilst the General population live mostly in the urban areas.

(d) Hospital Population.—There were 748 inmates on the register of the hospital at the end of 1957 of which 51 had not yet been examined by the district Commissioners in Lunacy and 61 were out on leave for the New Year.

The daily average was 720 compared with 697 in 1956. The daily maximum number of residents was 755.

(e) Table showing the number of Admissions, Discharges and Deaths:—

TABLE I

Cases admitted	*M*	*F*	*Total*
In hospital on 1.1.57	394	263	657
Back from New Year leave under G.N. 239/24	40	32	72
Admitted under interim detention orders later recovered and released ...	167	90	257
Admitted under interim detention orders later found sane and released ...	9	8	17
Ist admissions certified patients	47	30	77
IInd to IX admissions certified patients	32	26	58
Readmitted from probation	118	84	202
Readmitted from Victoria Hospital	2	3	5
Readmitted from Orthopaedic Centre Princess Margaret Hospital ...	1	—	1
Readmitted from escape	2	—	2
Died before examination by Commissioners of Lunacy	2	4	6
Still awaiting examination	34	17	51
TOTAL CASES ADMITTED DURING 1957	454	294	748
TOTAL CASES TREATED	848	557	1,405
Cases discharged			
Recovered and released during 1957 (including patients under interim detention since 1956 M 23+F 8)	190	98	288
Released by Commissioners of Lunacy found sane (induding M 1+F 1 since 1956	10	9	19
Transferred to Poor Law Infirmaries	31	—	31
Discharged by Central Board of Commissioners	169	122	291
Transferred to Victoria Hospital	2	3	5
Transferred to Princess Margaret Orthopædic Centre	1	—	1
Escaped	2	—	2
Died whilst on leave (G.N. 239/24)	1	—	1
Died during the year	11	12	23
On leave under G.N. No. 239/24 on 31.12.57	30	31	61
TOTAL OF CASES DISCHARGED AND DEATHS	447	275	722
GRAND TOTAL OF RESIDENTS ON 31.12.57	401	282	683

In the above table it will be found that the rate of admissions for the whole population was: Urban 14,04 and Rural 5.63 per 10,000 inhabitants.

This rate according to ethnical group was :—

Rural area for general population	6·2 per 10,000
,, Indo-Mauritian	5·1 ,,

In urban areas	*General Population*	*Indo-Mauritian*
Town of Port Louis ...	15·6	12·1
Beau Bassin—Rose Hill ...	19·3	16·2
Quatre Bornes	12·7	2·9
Curepipe	17·2	17·7

These figures would tend to indicate the influence of economic and environmental stress which in the urban areas is more severe on the incidence of mental illness.

The ratio of relapse for the same period was 30·7. The capacity of absorption taking into consideration 31 patients transferred to a Convent was 1·01.

TABLE II

Table Showing the Age distribution of direct Admissions and Residents of the Hospital

Age distribution of admissions and estimated age distribution of residents on 31st December, 1956:—

		0–15	*16 and Over*	*20 and Over*	*25 and Over*	*35 and Over*	*45 and Over*	*55 and Over*	*65 and Over*	*All ages*
Direct Admissions										
Numbers	M ...	5	24	39	78	63	49	23	10	291
	F ...	10	19	26	34	42	24	8	12	175
Rates per 100,000										
	M ...	2	8	13	26	21	16	8	3	
	F ...	3	7	9	12	14	8	3	4	
Residents on 31.12.57										
Numbers	M ...	3	10	30	103	100	88	51	16	401
Numbers	F ...	4	7	15	48	66	70	43	29	282
Rates per 100,000										
	M ...	1	3	10	35	34	30	17	5	
	F ...	1	2	5	17	23	24	15	10	

(g) Distributions from age groups of direct admissions by age and region for 1957.

	Males						*Females*					
Urban Areas	*0—15*	*16*	*25*	*45*	*65 and Over*	*All Ages*	*0—15*	*16*	*25*	*45*	*65 and Over*	*All Ages*
Port Louis ...	2	9	25	12	2	50	2	10	19	8	1	40
Beau Bassin Rose Hill	2	11	20	3	2	38	2	7	9	2	4	24
Quatre Bornes ...	—	4	6	4	—	14	—	2	4	1	—	7
Curepipe ...	—	2	17	7	1	27	—	3	6	1	—	10
Rural areas ...	1	37	73	46	5	162	6	23	38	20	7	94
						291						175

(h) Causes of Insanity:—Alcoholism is still a major etiological factor, 41 cases of acute alcoholism and 27 psychoses associated with alcoholism were recorded.

Malnutrition is still prevalent among the Indo-Mauritian women. 7 cases of addiction to Gandia and one case of addiction to Amphetemine in a European girl were registered. In the latter case, apart from psychotic symptoms, there was a general fall of hair (Scalp, pubis and axilla). This symptom however cleared after the complete withdrawal of the drug. The other causes worth mentioning were according to their importance, heredity, epilepsy and domestic worries.

(i) Infective-Nutritional and allied diseases:—Sixteen (16) cases of dysentry (unclassified) and 7 cases of bacillary dysentry were registered amongst male patients. Sixty-five (65) cases of Pellagra were recorded, 51 of these were registered on newly admitted patients. Six (6) cases of other avitaminoses were diagnosed on female patients. No case of typhoid was recorded. All patients were inoculated with T.A.B. on admission.

(j) Modes of Treatment:—Insulin shock Therapy and Electroplexy are the principal modes of treatment. The results, as shown in the table of discharge are very encouraging.

As reported at the Bukawa conference of psychiatrists, it appears that Mauritius, apart from South Africa, is the only country South of the Sahara, where deep Insulin Coma has been a standard treatment for years. Tranquilizers are being used very successfully in the treatment of neuroses and pyschoses. Medical Officers of the Hospital make an increasing use of Psychotherapy.

Group-psychotherapy for the in-patients has been instituted and it is hoped that this treatment will benefit the patients.

As regards Insulin treatment there is a current of opinion that Insulin alone is not responsible for the success recorded. An experiment has been started by which Insulin is given only to a group of selected patients suffering from Schizophrenia, with another group of Schizophrenics receiving only psychological treatment acting as "controls".

The hospital outpatient clinic is increasingly used by the public. Some psychoses e.g. M.D.I. are being treated but most of the patients attending the out-patient clinic for out-door treatment suffer from psycho-neuroses. An improved out-patient department is under construction which will accommodate an Electro-Encephalography department.

Recreation and Occupational Therapy.—Until recently quiet patients enjoyed a weekly outing to the sea-side but unfortunately the vehicles used for that purpose have had to be scrapped. It is hoped to replace the vehicles at an early date. Quiet patients also attend once a month cinema performances held in the local cinemas and thoroughly enjoy that form of entertainment. Radio programmes and recorded music are transmitted through loud speakers to all the wards. The Public Relations Department provided cinema shows in the male day-room. The Red Cross continues to help in distributing cigarettes and sweets to patients, and friends of the hospital also send magazines and books. Volley ball and football are played and from time to time matches are arranged with outside teams who visit the hospital. The annual Christmas Party was enjoyed by the patients and thanks must go to all the friends of the hospital who contributed so generously thereby giving everyone of the patients the opportunity to receive a present on that occasion.

Every effort is being made to keep the patients usefully occupied and an average of 230 patients do washing, darning, gardening, carpentry, cabinet-making and basketry. The Occupational Therapy class provides a valuable outlet and patients may spend as they choose the money they earn by their work. One of the staff is attending a Handicraft course in U.K. and it is expected that the experience gained by this officer will prove to be of great benefit to the hospital. Two other attendants (one male and one female) are following courses at Beau Bassin Training College. The Hospital appreciates the valuable assistance afforded by the Principal of that College.

(k) Welfare of Discharged Patients.—The appointment of a psychiatric social worker is still needed. The qualities, technical and other, which such an officer should possess, make it unlikely that a suitable candidate can be found in Mauritius at present and it would be advisable to send a person abroad to be trained in that special type of work, which is of great importance, as relapses could be prevented if discharged patients could be properly followed up.

II. Out-Patients

44. No modern health organisation can operate without an out-patient and dispensary service. The main functions of this service are :—

(a) Screening of patients applying for admission to hospitals to avoid unsuitable filling of scarce and expensive beds ;

(b) Diagnosis and treatment of simple cases and provision of first-aid ;

(c) Follow-up of patients discharged from hospitals ; and

(d) Health education.

45. All the hospitals have out-patient clinics which are supplemented by 37 static dispensaries scattered all over the island and by a mobile service. In addition there is a mobile dispensary service composed of four units which visit 64 villages and hamlets where it would be uneconomical to have permanent buildings and staff. These units made 974 trips and attended to 77,561 patients. The total attendances at the static dispensaries and at the out-patient departments attached to the hospitals numbered 612,140. The figures for the five preceding years were :—

1952	...	...	379,476
1953	...	...	399,899
1954	...	...	402,136
1955	...	...	457,114
1956	...	...	501,072

III. The Laboratory Service

46. A total of 123,951 examinations were carried out as against 118, 118 in 1956 :—

Central Laboratory	Clinical Section ...	72,189
	Chemical Section ...	8,852
Civil Hospital		25,065
Victoria Hospital		17,845

The increasing demand for Laboratory service continues and this was felt particularly by the Blood Transfusion Unit and by the Hospital Branch Laboratories where the accomodation leaves much to be desired.

47. The emergence of antibiotics resistant strains of Staphylococcus pyogenes, variety aureus, created a problem. Sensitivity tests were carried out on 51 strains of Staph pyogenes. 78 per cent were found to be resistant to Penicillin, 39 per cent to Streptomycin, 32 per cent to Aureomycin and 27 per cent to Terramycin. The Pathologist is of the opinion that this situation may be caused by :—

(a) Medical practitioners giving inadequate amounts of penicillin, or too short a course e.g., 2—3 injections.

(b) The man in the street's faith in anti-biotics leading to unexpert inadequate self treatment thus producing resistant strains of micro-organisms.

48. Water analysis at the main reservoirs were carried out weekly and monthly. Water issuing from the main tap at La Marie was found to be satisfactory throughout the year. Water in a tap in the Laboratory supplied from La Marie, was found to be unsatisfactory on 6 occasions,

probably due to local contamination. This is being investigated. Samples from taps from Monneron and La Butte reservoirs were found to be unsatisfactory on 3 occasions. Samples from Piton du Milieu reservoir and a tap at La Nicoliere were nearly always unsatisfactory

49. A summary of the work performed by the Laboratory Service is shown at Appendix.

IV.—Blood Transfusion Service

50. The Blood Transfusion Service is entirely voluntary and is organised with the assistance of the St. John Ambulance Association, the Stretcher Bearers' Association and the Mauritius Branch of the Red Cross Society. The policy of obtaining blood required for a transfusion from a relative or friend of the patient continued to be implemented, but when this was not possible and in cases of emergency, donors were supplied by the Blood Transfusion Service and this opportunity is taken of expressing gratitude to the many voluntary donors who have given their constant support to this vital service.

PART IV

Health Services

I. Vital Statistics

51. The following is a summary of vital statistics for the years 1956 and 1957 :—

	1956	*1957*
Estimated population on 31st December ...	579,123	596,621
Estimated mid-year population	568,886	587,872
Number of Live Births	24,910	25,273
Number of Still Births	1,789	1,800
Number of Deaths	6,739	7,603
Maternal deaths	57	77
Infant Mortality (under 1 year of age)	1,644	1,897
Rates :		
Birth rate per 1,000 population	43·8	43·1
Crude death rate per 1,000 population	11·8	13·0
Maternal mortality rate per 1,000 births ...	2·13	2·84
Infant mortality rate per 1,000 births	66·0	75·1
Still birth rate per 100 live births	7·2	7·1

52. The increase in the crude death rate, maternal mortality rate, infant mortality rate and still births can probably be attributed to the influenza epidemic.

Births

53. Live births during the year numbered 25,273. This figure represents an increase of 363 on the number of births for 1956 and an increase of 3,039 over the yearly average number of births for the ten years preceding 1957. The rate per 1,000 of population (mid–1957) is 43.1. The numbers and rates for each of the last ten years in the General and Indo-Mauritian population are as follows :—

Year	*Number*			*Rate*		
	General Population	*Indo-Mauritian Population*	*Total Population*	*General Population*	*Indo-Mauritian Population*	*Total Population*
1948 ...	5,753	13.286	19,039	35.8	47.3	43.1
1949 ...	5,999	14,473	20,472	37.3	51.0	46.0
1950 ...	6,840	16,270	23,110	40.7	54.8	49.7
1951 ...	7,317	15,651	22,968	42.0	50.5	47.5
1952 ...	7,479	16,641	24,120	45.0	49.6	48.1
1953 ...	7,471	16,425	23,896	43·9	47·4	46·3
1954 ...	7,114	14,812	21,926	40·9	41·5	41·3
1955 ...	7,418	15,552	22,970	41·1	42·2	41·8
1956 ...	7,952	16,958	24,910	42·6	44·4	43·8
1957 ...	7,278	17,995	25,273	37·9	45·6	43·1

54. The lowest birth rate recorded since the beginning of the century was in 1932 (26.2). The highest level was reached in 1950 with a rate of 49·7, the second highest being 48·1 in 1952.

Deaths

55. 7,603 deaths were registered in 1957, of whom 4,019 were males and 3,584 females. The 7,603 deaths correspond to a rate of 13·0 per 1,000 of the mid-year population : the average for the years 1948 to 1957 is 7,720. Births (25,273) exceeded the deaths by 17,670.

56. The following table gives the number of deaths and the death rate per 1,000 of population for each of the last ten years ;—

TABLE I

Statistics of Morbidity and Mortality Calendar Year 1957

	Intermediate List Cause Groups	Detailed List Numbers	Static dispensaries and out-patient depts of hospitals			Hospitals—(In patients)						Mobile Dispensaries Attendances
			New cases			Male patients		Female patients				
			Male	Female	Total cases	New cases	deaths	New cases	deaths	Total cases	Total deaths	
A	1. Tuberculosis of respiratory system ...	001–008	—	—	—	292	40	217	14	509	54	—
A	2. Tuberculosis of meninges and central nervous system	010	—	—	—	9	7	6	5	15	12	—
A	3. Tuberculosis of intestines, peritoneum and mesenteric glands	011	—	—	—	6	1	6	1	12	2	—
A	4. Tuberculosis of bones and joints ...	012,013	—		—	5	—	2	—	7	—	—
A	5. Tuberculosis, all other forms	014–019	—	—	—	5	—	11	—	16	—	—
A	6. Congenital syphilis	020	1	—	1	1	1	2	—	3	1	4
A	7. Early syphilis	021	2	4	6	13	—	8	—	21	—	—
A	8. Tabes dorsalis	024	—	—	—	4	—	—	—	4	—	—
A	9. General paralysis of insane	025	—	—	—	1	—	—	—	1	—	—
A	10. All other syphilis	022,023 026–029	229	233	462	32	—	13	—	45	—	—
A	11. Gonoccocal infections	030–035	39	25	64	6	—	—	—	6	—	—
A	12. Typhoid fever	040	—	—	—	50	—	22	1	72	1	—
A	13. Paratyphoid fever and other Salmonella infections	041,042	—	—	—	2	—	1	—	3	—	—
A	14. Cholera	043	—	—	—	—	—	—	—	—	—	—
A	15. Brucellosis (undulant fever)	044	—	—	—	—	—	—	—	—	—	—
A	16.—(*a*) Bacillary dysentery	045	—	3	3	2	—	1	—	3	—	—
	(*b*) Amœbiasis	046	230	144	374	56	2	21	—	77	2	2
	(*c*) Other unspecified forms of dysentery	047,048	1,581	1,297	2,878	26	2	14	—	40	2	726
A	17. Scarlet fever	050	—	—	—	—	—	—	—	—	—	—
A	18. Streptococcal sore throat...	051	5	8	13	1	—	—	—	1	—	—
A	19. Erysipelas	052	—	—	—	—	—	—	—	—	—	—
A	20. Septicæmia and pyæmia	053	—	—	—	2	—	4	3	6	3	—
A	21. Diphtheria	055	—	—	—	14	4	17	4	31	8	—
A	22. Whooping cough	056	319	337	656	7	—	13	—	20	—	92
A	23. Meningococcal infections	057	—	—	—	—	—	—	—	—	—	—
A	24. Plague	058	—	—	—	—	—	—	—	—	—	—
A	25. Leprosy	060	—	—	—	—	—	—	—	—	—	—
A	26. Tetanus	061	—	—	—	62	25	28	11	90	36	—

A	27. Anthrax	062	—	—	—	—	—	—	—	—	—	—	—
A	28. Acute poliomyelitis	080	—	—	—	—	—	9	—	31	—	—	—
A	29. Acute infectious encephalitis	082	—	—	—	—	—	1	—	1	—	—	—
A	30. Late effects of acute poliomyelitis and acute infectious encephalitis	081,083	—	—	—	—	—	—	—	—	—	—	—
A	31. Smallpox	084	—	—	—	—	—	—	—	—	—	—	—
A	32. Measles	085	1	—	1	2	—	1	—	3	—	—	—
A	33. Yellow fever	091	—	—	—	—	—	—	—	—	—	—	—
A	34. Infectious hepatitis	092	38	21	59	77	1	30	1	107	2	—	—
A	35. Rabies	094	—	—	—	—	—	—	—	—	—	—	—
A	36.—(*a*) Louse-borne epidemic typhus ...	100	—	—	—	—	—	—	—	—	—	—	—
	(*b*) Flea-borne endemic typhus (murine)	101	—	—	—	—	—	—	—	—	—	—	—
	(*c*) Tickborne epidemic typhus	104	—	—	—	—	—	—	—	—	—	—	—
	(*d*) Mite-borne typhus	105	—	—	—	—	—	—	—	—	—	—	—
	(*e*) Other and unspecified typhus	102,103 106-108	—	—	—	—	—	—	—	—	—	—	—
A	37.—(*a*) Vivax malaria (benign tertian) ...	110	—	—	—	1	—	1	—	2	—	—	—
	(*b*) Malariæ malaria (quartan)	111	—	—	—	—	—	—	—	—	—	—	—
	(*c*) Falciparum malaria (malignant tertian)	112	—	—	—	1	—	—	—	1	—	—	—
	(*d*) Blackwater fever	115	—	—	—	—	—	—	—	—	—	—	—
	(*e*) Other and unspecified forms of malaria	113,114 116,117	2	1	3	1	—	—	—	1	—	—	—
A	38.—(*a*) Schistosomiasis vesical (S. hæmatobium)	123·0	273	66	339	21	1	12	—	33	1	—	
	(*b*) (Schistosomiasis intestinal (S. Mansoni) ...	123·1	—	—	—	—	—	—	—	—	—	—	
	(*c*) Schistosomiasis pulmonary (S. japonicum) ...	123·2	—	—	—	—	—	—	—	—	—	—	
	d) Other and unspecified Schistosomiasis	123·3	—	—	—	—	—	—	—	—	—	—	
A	39. Hydatid disease	125	—	—	—	—	—	—	—	—	—	—	
A	40.—(*a*) Onchocerciasis	127	—	—	—	—	—	—	—	—	—	—	
	(*b*) Loiasis	—	—	—	—	—	—	—	—	—	—	—	
	(*c*) Filariasis (bancrofti)	—	17	13	30	6	—	3	—	9	—	—	
	(*d*) Other filariasis	—	—	—	—	—	—	—	—	—	—	—	
A	41. Ankylostomiasis	129	3,466	3,875	7,341	190	—	246	—	436	—	—	
A	42.—(*a*) Tapeworm (infestation) and other cestode infestations	126	—	—	—	6	—	—	—	6	—	—	
	(*b*) Ascariasis	130·0	6,531	7,623	14,154	98	—	66	—	164	—	4,109	
	(*c*) Guinea worm (dracunculosis) ...	130·3	283	292	575	1	—	—	—	1	—	—	
	(*d*) Other diseases due to helminths	124, 128 130·1, 130·2	2,996	3,258	6,254	60	1	74	—	134	—	11,056	

TABLE I—*continued*

Intermediate List Cause Group	*Detailed List Numbers*	*Static dispensaries and out-patient depts of hospitals*			*Hospitals—(In patient)*						*Mobile Dispensaries*
		New cases			*Male patients*		*Female patients*				
		Male	*Female*	*Total cases*	*New cases*	*deaths*	*New cases*	*deaths*	*Total cases*	*Total deaths*	**Attendances**
A 43.—(*a*) Lymphogranuloma venereum ...	037	—	—	—	1	—	—	—	1	—	—
(*b*) Granuloma inguinale, venereal ...	038	—	—	—	—	—	—	—	—	—	—
(*c*) Other and unspecified venereal diseases	039	2	1	3	3	—	1	—	4	—	—
(*d*) Food poisoning infection and intoxication	049	—	2	2	7	1	22	—	29	1	—
(*e*) Relapsing fever	071	—	—	—	—	—	—	—	—	—	—
(*f*) Leptospirosis icterohaemorrhagica (Weil's disease)	072	—	—	—	—	—	—	—	—	—	—
(*g*) Yaws	073	—	—	—	—	—	—	—	—	—	—
(*h*) Chickenpox	087	1	1	2	1	—	—	—	1	—	—
(*i*) Dengue	090	—	—	—	—	—	—	—	—	—	—
(*j*) Trachoma	095	—	—	—	—	—	—	—	—	—	—
(*k*) Sandfly fever	096·7	—	—	—	—	—	—	—	—	—	—
(*l*) Leishmaniasis	120	—	—	—	—	—	—	—	—	—	—
(*m*) (i) Trypanosomiasis gambiensis ...	121	—	—	—	—	—		—	—	—	—
(ii) Trypanosomiasis rhodesiensis ...	—	—	—	—	—	—	—	—	—	—	—
(iii) Other and unspecified Trypanosomiasis	—	—	—	—	—	—	—	—	—	—	—
(*n*) Dermatophytosis	131	33	18	51	—	—	—	—	—	—	99
(*o*) Scabies	135	2,189	2,088	4,277	—	—	—	—	—	—	2,560
(*p*) All other diseases classified as infective and parasitic	036, 054, 059, 063, 064, 070, 074, 086, 088, 089, 093, 096·1–096·6, 096·8, 096·9, 122, 132–134, 136–138	59	30	89	25	—	11	1	36	1	—
A 44. Malignant neoplasm of buccal cavity and pharynx	140–148	—	—	—	11	2	1	1	12	3	—
A 45. Malignant neoplasm of oesophagus ...	150	—	—	—	3	—	2	—	5	—	—
A 46. Malignant neoplasm of stomach	151	—	—	—	25	6	14	1	39	7	—

A	47. Malignant neoplasm of intestine, except-rectum	152, 153	—	—	—	4	2	3	1	7	3	—
A	48. Malignant neoplasm of rectum	154	—	—	—	12	1	1	—	13	1	—
A	49. Malignant neoplasm of larynx	161	—	—	—	7	3	—	—	7	3	—
A	50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	162, 163	—	—	—	9	3	2	1	11	4	—
A	51. Malignant neoplasm of breast	170	—	—	—	—	—	20	3	20	3	—
A	52. Malignant neoplasm of cervix uteri ...	171	—	—	—	—	—	87	4	87	4	—
A	53. Malignant neoplasm of other and unspecified parts of uterus	172–174	—	—	—	—	—	4	—	4	—	—
A	54. Malignant neoplasm of prostate	177	—	—	—	2	2	—	—	2	2	—
A	55. Malignant neoplasm of skin	190, 191	—	—	—	3	—	6	—	9	—	—
A	56. Malignant neoplasm of bone and connective tissue	196, 197	—	—	—	5	2	3	1	8	3	—
A	57. Malignant neoplasm of all other and unspecified sites	155–159, 160, 164, 165, 175, 176, 178–181, 192–195, 198, 199	7	—	7	26	9	24	4	50	13	—
A	58. Leukæmia and aleukæmia	204	—	—	—	7	2	4	1	11	3	—
A	59. Lymphosarcoma and other neoplasms of lymphatic and hæmatopoietic system	200–203, 205	—	—	—	12	2	2	—	14	2	—
A	60. Benign neoplasms and neoplasms of unspecified nature	210–239	138	165	303	20	1	220	7	240	8	—
A	61. Nontoxic goiter	250, 251	1	5	6	2	—	8	—	10	—	—
A	62. Thyrotoxicosis with or without goiter ...	252	1	3	4	4	—	17	—	21	—	—
A	63. Diabetes mellitus	260	188	289	477	102	9	132	11	234	20	—
A	64.—(*a*) Beriberi	280	—	—	—	—	—	—	—	—	—	—
	(*b*) Pellagra	281	34	90	124	12	1	68	1	80	2	21
	(*c*) Scurvy	282	1	3	4	—	—	—	—	—	—	—
	(*d*) (i) Kwashiorkor	283	18	16	34	10	5	13	6	23	11	6
	(ii) Other deficiency states	286	1,759	2,825	4,584	146	23	167	21	313	44	1,597
A	65.—(*a*) Pernicious and other hyperchromic anaemias	290	3	—	3	21	—	27	—	48	—	—
	(*b*) Iron deficiency anaemias (hypochromic)	291	5	21	26	28	—	38	—	66	—	—
	(*c*) Other specified and unspecified anaemias	292, 293	10,068	28,134	38,202	587	17	1,131	17	1,718	34	14,148

TABLE I—*continued*

	Intermediate List Cause Group	*Detailed List Numbers*	*Static dispensaries and out-patient depts of hospitals*			*Hospitals—(In patients)*						*Mobile Dispensaries*
			New cases			*Male patients*		*Female patients*				
			Male	*Female*	*Total cases*	*New cases*	*deaths*	*New cases*	*deaths*	*Total cases*	*Total deaths*	**Attendances**
A	66.—(*a*) Asthma	241	2,455	2,210	4,665	179	8	168	2	347	10	1,535
	(*b*) All other allergic disorders, endocrine, metabolic and blood diseases	240, 242–245, 253, 254, 270–277, 287–289, 294–299	533	796	1,329	18	4	22	2	40	6	20
A	67. Psychoses	300–309	—	—	—	145	—	87	—	232	—	—
A	68. Psychoneuroses and disorders of personality	310–324, 326	25	29	54	100	—	65	—	165	—	3
A	69. Mental deficiency...	325	4	1	5	15	—	9	—	24	—	—
A	70. Vascular lesions affecting central nervous system	330–334	40	26	66	125	43	54	21	179	64	—
A	71. Nonmeningococcal meningitis	340	—	—	—	32	17	19	13	51	30	—
A	72. Multiple sclerosis...	345	—	—	—	1	—	—	—	1	—	—
A	73. Epilepsy	353	204	156	360	39	1	27	1	66	2	24
A	74, Inflammatory diseases of eye	370–379	2,144	1,930	4,074	29	—	18	—	47	—	746
A	75. Cataract	385	4	3	7	78	—	101	—	179	—	—
A	76. Glaucoma	387	2	3	5	3	—	2	—	5	—	—
A	77.—(*a*) Otitis externa	390	1,602	1,586	3,188	2	—	1	—	3	—	900
	(*b*) Otitis media and mastoiditis ...	391–393	906	947	1,853	44	—	28	—	72	—	1
	(*c*) Other inflammatory diseases of ear	394	1,297	1,287	2,584	1	—	—	—	1	—	815
A	78.—(*a*) All other diseases and conditions of eye	380–384, 386, 388, 389	929	883	1,812	27	—	27	—	54	—	36
	(*b*) All other diseases of the nervous system and sense organs	341–344, 350–352, 354–357, 360–369, 395–398	2,290	2,384	4,674	215	6	132	6	347	12	1,694
A	79. Rheumatic fever	400–402	1	11	12	51	4	48	—	99	4	—
A	80. Chronic rheumatic heart disease ...	410–416	8	9	17	33	1	67	7	100	8	—

A	81. Arteriosclerotic and degenerative heart disease	420–422	114	55	169	84	31	43	16	127	47	10
A	82. Other diseases of heart	430–434	599	575	1,174	345	79	189	42	534	121	446
A	83. Hypertension with heart disease ...	440–443	107	99	206	10	2	5	1	15	3	—
A	84. Hypertension without mention of heart	444–447	1,273	1,510	2,783	111	4	69	2	180	6	293
A	85. Diseases of arteries	450-456	61	84	145	74	7	23	2	97	9	1
A	86. Other diseases of circulatory system ...	460–468	810	545	1,355	181	2	108	3	289	5	38
A	87. Acute upper respiratory infections ...	470–475	3,088	3,962	7,050	83	1	98	5	181	6	2,070
A	88. Influenza	480–483	16,782	16,900	33,682	441	—	239	—	680	—	7,658
A	89. Lobar pneumonia	490	6	—	6	75	3	25	1	100	4	—
A	90. Bronchopneumonia	491	22	19	41	126	25	84	29	210	54	1
A	91. Primary atypical, other and unspccified-pueumonia	492, 493	8	5	13	107	10	44	7	151	17	—
A	92. Acute bronchitis	500	540	551	1,091	94	6	72	3	166	9	112
A	93. Bronchitis, chronic and unqualified ...	501, 502	2,736	2,134	4,870	323	11	193	1	516	12	584
A	94. Hypertrophy of tonsils and adenoids ...	510	609	831	1,440	18	—	44	—	62	—	96
A	95. Empyema and abscess of lung ...	518, 521	1	—	1	4	—	6	1	10	1	—
A	96. Pleurisy	519	24	9	33	55	2	39	1	94	3	4
A	97.—(*a*) Pneumoconiosis	523	—	—	—	2	—	1	—	3	—	—
	(*b*) All other respiratory diseases	511–517, 520–522, 524–527	726	977	1,703	113	14	71	4	184	18	1,493
A	98.—(*a*) Dental caries	530	6,421	6,158	12,579	25	—	10	—	35	—	44
	(*b*) All other diseases of teeth and supporting structures	531–535	746	661	1,407	29	—	18	—	47	—	381
A	99. Ulcer of stomach	540	34	16	50	29	4	4	—	33	4	—
A	100. Ulcer of duodenum	541	73	18	91	282	15	33	1	315	16	—
A	101. Gastritis and duodenitis	543	1,376	1,358	2,734	98	1	62	—	160	1	210
A	102. Appendicitis	550–553	4	7	11	321	3	524	4	845	7	1
A	103. Intestinal obstruction and hernia ...	560, 561, 570	9	4	13	267	15	45	5	312	20	14
A	104.—(*a*) Gastro-enteritis and colitis between 4 weeks and 2 years	571·0	2,402	2,163	4,565	95	30	89	36	184	66	1,590
	(*b*) Gastro-enteritis and colitis, ages 2 years and over	571·1	2,045	1,970	4,015	158	18	115	22	273	40	3,201
	(*c*) Chronic enteritis and ulcerative colitis	572	20	25	45	15	4	9	3	24	7	—
A	105. Cirrhosis of liver	581	71	30	101	34	5	14	2	48	7	2
A	106. Choletithiasis and cholecystitis	584, 585	69	72	141	51	1	51	2	102	3	7
A	107. Other diseases of digestivc system	536–539, 542, 544, 545, 573–580, 582, 583, 586, 587	14,267	15,986	30,253	392	18	236	9	628	27	7,977

TABLE I—*continued*

Intermediate List Cause Group	*Detailed List Numbers*	*Static dispensaries and out-patient depts of hospitals* — *New cases* — *Male*	*Female*	*Total cases*	*Hospitals—(In patients)* — *Male patients* — *New cases*	*deaths*	*Female patients* — *New cases*	*deaths*	*Total cases*	*Total deaths*	*Mobile Dispensaries* **Attendances**
A 108. Acute nephritis	590	4	8	12	22	3	31	1	53	4	—
A 109. Chronic, other and unspecified nephritis	591—594	153	166	319	31	5	25	1	56	6	58
A 110. Infections of kidney	600	11	18	29	20	—	29	—	49	—	—
A 111. Calculi of urinary system	602—604	1	—	1	45	1	3	—	48	1	1
A 112. Hyperplasia of prostate	610	—	—	—	26	1	—	—	26	1	—
A 113. Diseases of breast	620, 621	—	98	98	—	—	21	—	21	—	—
A 114.—(*a*) Hydrocele	613	115	—	115	94	—	—	—	94	—	1
(*b*) Disorders of menstruation ...	634	—	2,964	2,964	—	—	158	—	158	—	146
(*c*) All other diseases of the genito-urinary system	601, 603, 605—609, 611—612, 614—617, 622—633, 635—637	1,742	3,777	5,519	186	1	411	1	597	4	146
A 115. Sepsis of pregnancy, childbirth and the puerperium	640, 641, 681, 682, 684	—	16	16	—	—	59	2	59	2	—
A 116. Toxaemias of pregnancy and the puerperium	642, 652, 685, 686	—	57	57	—	—	469	19	469	19	—
A 117. Haemorrhage of pregnancy and childbirth	643, 644, 670—672	—	3	3	—	—	127	16	127	16	—
A 118. Abortion without mention of sepsis or toxaemia	650	—	166	166	—	—	747	—	747	—	4
A 119. Abortion with sepsis	651	—	—	—	—	—	30	5	30	5	—
A 120.—(*a*) Other complications of pregnancy, childbirth and the puerperium	645—649, 673—680, 683, 687—689	—	7,265	7,265	—	—	1,374	51	1,374	51	102
(*b*) Delivery without complications ...	660	—	—	—	—	—	3,124	—	3,124	—	—
A 121. Infections of skin and subcutaneous tissue	690—698	8,051	6,052	14,103	401	—	185	—	586	—	1,358
A 122. Arthritis and spondylitis	720—725	659	726	1,385	68	—	78	—	146	—	22
A 123. Muscular rheumatism, and rheumatism, unspecified	726, 727	6,305	8,284	14,589	90	—	74	—	164	—	2,763

A	124. Osteomyelitis and periostitis	730	2	—	2	22	—	10	—	32	—	—	
A	125. Ankylosis and acquired musculoskeletal deformities...	737, 745—749	9	16	25	4	—	2	—	6	—	—	
A	126.—(*a*) Chronic ulcer of skin (including tropical ulcer)	715	449	618	1,067	19	—	5	—	24	—	6	
	(*b*) All other diseases of skin ...	700—714, 716	1,973	1,936	3,909	78	—	46	1	124	1	761	
	(*c*) All other diseases of musculoskeletal system	731—736, 738—744	116	141	257	28	—	11	—	39	—	17	
A	127. Spina bifida and meningocele	751	—	—	—	1	1	11	7	12	8	—	
A	128. Congenital malformations of circulatory system	754	—	—	—	2	—	4	2	6	2	—	
A	129. All other congenital malformations	750, 752, 753, 755—759	23	18	41	41	4	22	3	63	7	—	
A	130. Birth injuries	760, 761	—	—	—	8	6	3	—	11	6	—	
A	131. Postnatal asphyxia and atelectasis ...	762	—	—	—	47	47	31	30	78	77	—	
A	132.—(*a*) Diarrhœa of newborn (under 4 weeks)	764	73	115	188	9	2	8	4	17	6	—	
	(*b*) Ophthalmia necnatorum	765	—	2	2	2	—	3	—	5	—	—	
	(*c*) Other infections of newborn ...	763, 766—768	24	15	39	17	9	13	6	30	15	—	
A	133. Haemolytic disease of newborn ...	770	1	—	1	8	4	5	2	13	6	—	
A	134. All other defined diseases of early infancy	769, 771, 772	7	4	11	5	2	4	2	9	4	85	
A	135. Ill-defined diseases peculiar to early infancy, and immaturity unqualified	773—776	11	6	17	89	78	85	77	174	155	9	
A	136. Senility without mention of psychosis ...	794	64	85	149	37	4	48	9	85	13	—	
A	137.—(*a*) Pyrexia of unknown origin ...	788·8	1,165	1,525	2,690	75	3	60	1	135	4	1,776	
	(*b*) Observation, without need for further medical care	793	—	—	—	164	—	484	—	648	—	—	
	(*c*) All other ill-defined causes of morbidity	780—787, 788·1—788·7, 788·9, 789—792, 795	12,710	18,459	31,169	547	17	479	10	1.026	27	2,634	
	TOTAL		131,678	172,413	304,091	9,522	759	14,561	625	24,083	1,384	76,636	

TABLE I—*continued*

Intermediate List Cause Groups	*Detailed List Numbers*	*Static dispensaries and out-patient depts of hospitals*			*Hospitals – (In patients)*						*Mobile Dispensaries*
		New cases			*Male patients*		*Female patients*				
		Male	*Female*	*Total cases*	*New cases*	*deaths*	*New cases*	*deaths*	*Total cases*	*Total deaths*	**Attendances**
"E CODE" ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (EXTERNAL CAUSE)											
AE 138. Motor vehicle accidents... ...	E 810–E 835	209	48	257	347	22	82	9	429	31	—
AE 139. Other transport accidents ...	E 800–E 802, E 840–E 866	878	319	1,197	167	—	16	—	183	—	—
AE 140. Accidental poisoning	E 870–E 895	31	19	50	64	3	44	1	108	4	—
AE 141. Accidental falls	E 900–E 904	6,642	2,811	9,453	625	10	205	1	830	11	149
AE 142. Accident caused by machinery	E 912	53	6	59	22	—	—	—	22	—	—
AE 143. Accident caused by fire and explosion of combustible material	E 916	105	103	208	26	8	22	11	48	19	—
AE 144. Accident caused by hot substance, corrosive liquid, steam, and radiation	E 917, E 918	519	346	865	126	8	120	12	246	20	51
AE 145. Accident caused by firearm	E 919	—	—	—	10	1	—	—	10	1	—
AE 146. Accidental drowning and submersion ...	E 929	—	—	—	2	—	1	—	3	—	—
AE 147.—(*a*) Foreign body entering eye and adnexa	E 920	650	189	839	5	—	1	—	6	—	—
(*b*) Foreign body entering other orifice	E 923	350	269	619	9	—	5	—	14	—	1
(*c*) Accidents caused by bites and stings of venenous animals and insects ...	E 927	8	4	12	4	—	1	—	5	—	—
(*d*) Other accidents caused by animals	E 928	1,054	622	1,676	9	—	5	—	14	—	—
(*e*) All other accidental causes	E 910–E 911, E 913–E 915, E 921–E 922, E 924–E 926, E 930–E 965	30,236	12,244	42,480	526	6	120	—	646	6	527
AE 148. Suicide and self-inflicted injury ...	E 970–E 979	18	4	22	99	12	38	4	137	16	—
AE 149. Homicide and injury purposely inflicted by other persons (not in war) ...	E 980–E 985	2,191	1,044	3,235	427	5	130	—	557	5	—
AE 150. Injury resulting from operations of war	E 990–E 999	—	—	—	—	—	—	—	—	—	—
TOTAL		174,619	190,444	365,063	11,988	834	15,355	663	27,343	1,497	77,364

"N CODE" ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (NATURE OF INJURY)

SUB-TOTAL TO A 137 *brought forward* ...		131,675	172,416	304,091	9,520	759	14,565	625	24,085	1,384	76,636
AN 138. Fracture of skull	N 800–N 804	7	—	7	131	20	21	5	152	25	—
AN 139. Fracture of spine and trunk	N 805–N 809	140	72	212	83	4	16	2	99	6	1
AN 140. Fracture of limbs	N 810–N 829	1,330	655	1,985	360	3	103	—	463	3	1
AN 141. Dislocation without fracture	N 830–N 839	147	60	207	13	—	4	—	17	—	—
AN 142. Sprains and strains of joint and adjacent muscles	N 840–N 848	1,097	469	1,566	19	—	8	—	27	—	48
AN 143. Head injury (excluding fracture) ...	N 850–N 856	2,408	953	3,361	294	6	71	2	365	8	—
AN 144. Internal injury of chest, abdomen, and pelvis	N 860–N 869	50	12	62	22	9	4	1	26	10	—
AN 145. Laceration and open wounds	N 870–N 908	17,544	7,312	24,856	534	—	113	—	647	—	60
AN 146. Superficial injury, confusion aud crushing with intact skin surface ...	N 910–N 929	18,276	7,452	25,728	630	—	174	—	804	—	544
AN 147. Effects of foreign body entering through orifice	N 930–N 936	1,000	458	1,458	14	—	6	—	20	—	1
AN 148. Burns	N 940–N 949	624	449	1,073	157	16	146	23	303	39	51
AN 149. Effects of poisons	N 960–N 979	46	26	72	153	15	81	5	234	20	—
AN 150. All other and unspecified effects of external causes	N 950–N 959 N 980–N 999	275	110	385	58	2	43	—	101	2	22
TOTAL		174,619	190,444	365,063	11,988	834	15,355	663	27,343	1,497	77,364

Year	Number			Rate		
	General Population	*Indo-Mauritian Population*	*Total Population*	*General Population*	*Indo-Mauritian Population*	*Total Population*
1948 ...	3,424	7,094	10,518	21·3	25·2	23·8
1949 ...	2,451	4,933	7,384	15·2	17·4	16·6
1950 ...	2,161	4,292	6,453	12·9	14·5	13·9
1951 ...	2,456	4,757	7,208	14·1	15·3	14·9
1952 ...	2,564	4,883	7,447	15·4	14·6	14·8
1953 ...	2,987	5,312	8,299	17·5	15·3	16·1
1954 ...	3,100	5,362	8,462	17·8	15·0	16·0
1955 ...	2,547	4,541	7,088	14·1	12·3	12·9
1956 ...	2,525	4,314	6,739	13·0	11·3	11·8
1957 ...	2,421	5,182	7,603	12·6	13·1	13·0

The figures for the period covered by the above table show that the death rate is higher in the Indo-Mauritian Section of the community than in the other section (except for 1952 to 1956).

57. The average death rate for the period under review (1948–1957) is 15·39 for the General and 15·4 for the Indo-Mauritian Population.

Male and Female Death Rates

58. Male deaths registered in 1957 were at the rate of 112 for every 100 female deaths. The rates per 1,000 of population are 13·5 for the males and 12·4 for the females.

59. The figures for the General and the Indo-Mauritian Populations are as follows :—

Year	Rate per 1,000 population						Male deaths per 100 female deaths		
	General Population			*Indo-Maurilian Population*			*General Population*	*Indo-Mauritian Population*	*Tolal Population*
	Males	*Females*	*Both Sexes*	*Males*	*Females*	*Both Sexes*			
1953 ...	18·6	16·6	17·5	15·4	15·2	15·3	104	105	105
1954 ...	18·3	17·4	17·8	14·8	15·3	15·0	98	100	99
1955 ...	14·5	13·7	14·1	12·5	12·1	12·3	102	108	105
1956 ...	13·8	12·2	13·0	11·7	10·9	11·3	110	113	112
1957 ...	13·5	11·7	12·6	13·5	12·7	13·1	113	112	112

Ages at Death

60. Table 10 gives the number of deaths for the year 1957 in age groups.

Causes of Death

61. Table 8 shows the etiology of last year's mortality classified according to the Manual of the International List of Causes of Death (1948) (Revision) for the General and the Indo-Mauritian Populations separately. Table 7 the more notable causes of death in the different districts and Table 9 the principal causes of death in the whole Colony during the past two years

62. The comparison of the causes of death for the last two years with the proportion per thousand of population is given in the next table.

Cause of death	*Number of deaths*		*Rate per 1,000 of population*	
	1956	*1957*	*1956*	*1957*
1. Infective and parasitic diseases	354	416	0.6	0.7
2. Neoplasms	149	197	0.3	0.3
3. Allergic, endocrine system, metabolic and nutritional diseases	344	391	0.6	0.7
4. Diseases of the blood and blood forming organs	413	377	0.7	0.7
5. Mental, psychoneurotic and personality disorders	7	4	0.0	0,0
6, Diseases of the nervous system and sense organs	398	431	0.7	0.7
7. Diseasrs of the Circulatory system	498	622	0.9	1.1
8. Diseases of the Respiratory system	773	1,132	1.4	1.9
9. Diseases of the digestive system	865	1,007	1.5	1.7
10. Diseases of the genito-urinary system ...	111	107	0.2	0.2
11. Deliveries and complication of pregnancy, childbirth and the puerperium	57	77	0.1 *(a)*	0.1 *(c)*
12. Diseases of the skin and cellular tissue ...	12	12	0.0	0.0
13. Diseases of the bones and organs of movement	38	41	0.1	0.1
14. Congenital malformations	13	28	0.0	0.1
15. Certain diseases of early infancy	867	881	1.6 *(b)*	1.5 *(d)*
16. Senility, symptoms and ill-defined conditions	1,581	1,663	2.8	2.8
17. Accidents, poisonings and violence	259	217	0.5	0.4
	6,739	7,603	11.8	13.0

per 1,000 total births (i.e., live births and still births) : *(a)* 2.13 *(c)* 2.84

per 1,000 live births registered during the year : *(b)* 34.8 *(d)* 34.9

Infantile Mortality

63. The number of deaths of infants under one year was 1,897 against 1,644 in 1956; the infantile mortality rate (*i.e.*, the number of deaths of infants under one year of age, occurring in any year for every thousand live births registered the same year) was 75.1 per 1,000 as compared with 66.0 in 1956.

64. The deaths under five years were distributed as follows :—

Age	*Males*	*Females*	*Total*
Under 3 months	654	498	1,152
3 months and under 6 months	147	152	299
6 months and under 1 year	216	230	446
1 year and under 2 years	242	250	492
2 years and under 3 years	128	152	280
3 years and under 4 years	75	98	173
4 years and under 5 years	50	50	100
Total ...	1,512	1,430	2,942

65. The deaths of infants under 5 years of age were attributed to the following groups of diseases :—

Cause of death	*Under one year*	*One year and under five years*
1. Infective and parasitic diseases	99	100
2. Neoplasms	—	5
3. Allergic, endocrine system, metabolic and nutritional diseases	36	95
4. Diseases of the blood and blood forming organs ...	8	36
5. Mental, psychoneurotic and personality disorders	1	—
6. Diseases of the nervous system and sense organs...	13	13
7. Diseases of the circulatory system	2	10
8. Diseases of the respiratory system	311	240
9. Diseases of the digestive system	413	249
10. Diseases of the genito-urinary system	1	6
11. Deliveries and complication of pregnancy, childbirth and the puerperium	—	—
12. Diseases of the skin and cellular tissue	5	—
13. Diseases of the bones and organs of movement...	1	—
14. Congenital malformations	27	—
15. Certain diseases of early infancy	881	—
16. Symptoms, Senility and ill-defined conditions ...	92	262
17. Accidents, poisoning and violence	7	29
TOTAL ...	1,897	1,045

II. Public Health

A. COMMUNICABLE AND INFECTIOUS DISEASES

(TUBERCULOSIS)

66. The work and activities of the Tuberculosis Division were carried out on lines similar in those of the previous years.

In the middle of the year a second W.H.O. team arrived to continue the epidemiological survey of the 1956 team.

The team consists of a director, a physician, a statistician, a radiologist, two public health nurses and a laboratory technician. The team carries out a sample survey of the population and their study consists of Tuberculin Testing, sputum examination and miniature x–ray photography of these groups. This work will last about 2 years.

B. C. G. VACCINATION

67. During the year 1957, all the schools of the island were visited and testing, re-testing and vaccination of the school children were carried out as before.

The testing and B. C. G. vaccination of all new nursing students in hospitals continued as in previous years and contacts of all tuberculous cases were tested and vaccinated when necessary.

Throughout the year all the tuberculin tests were carried out by the Heaf Multiple Puncture technique, using the specially prepared P.P.D. Solution for the instrument. This test has been found very satisfactory and the results are comparable with those of the Mantoux test with 5 units of P.P.D.

During 1957, the vaccine used was Lyophilised Freeze Dried vaccine obtained from Pasteur Institute of Paris and the dose injected intradermally was as before (0.3 mg in $\frac{1}{10}$ c. c.). No untoward complications were met with this stronger dose.

Weekly visits to schools after vaccination were carried out by the Nursing Staff of the B.C.G. Campaign for supervision of the reactions. Dressings were applied to the ulcers and no abnormal reactions were reported.

During the year, 729 visits were made and 46,263 dressings applied.

During 1957 the number of persons who had tuberculin tests was 36,334 and 26,329 vaccinations (including 1,824 tests and 984 vaccinations done by W.H.O. team) were done.

68. The figures below show the B.C.G. work performed in 1957:—

	Routine				
	Children to School-leavers	*Adults*	*Contacts*	*New born to 1st year*	*Total*
Tests	34,470	649	1,197	194	34,510
Re-tests ...	11,538	152	53	6	11,749
Vaccinations ...	25,561	128	452	188	26,329

69. The following Table gives an analysis of the Tuberculin Sensitivity amongst the persons tested :—

ANALYSIS OF TESTS ACCORDING TO AGE GROUPS

Age	*Total*	*Positives*	*Negatives*	*% of Positives*
0– 1 ...	188	25	163	13·2
2– 4 ...	319	83	236	26·01
5– 9 ...	21,171	3,289	17,882	15·5
10–14 ...	8,328	2,685	5,643	32·2
15–19 ...	359	175	184	48·7
20–24 ...	215	137	78	63·7
25–29 ...	111	77	34	69·3
30–34 ...	100	74	26	74·0
35–39 ...	72	62	10	86 1
40+ ...	151	128	23	84·7
TOTAL ...	31,014	6,735	24,179	

70. The total number of patients on the Tuberculosis Register at the end of 1957 was 4,074. Total number of cases notified in 1957 was 449 as against 424 in 1956.

71. During the year, an average of 210 hospital beds were occupied by tuberculosis patients in the various Hospitals. Outpatients clinics were held at the Civil and the Victoria Hospitals every week and at monthly intervals in the district hospitals.

72. The following tables give a summary of the work performed by the division :—

TABLE I

Return for 1957—Civil and Victoria Hospitals

Out-Patient Section

Consultation

Tuberculosis	*Males*		*Females*		*Children*	
	1st Visits	*Return Visits*	*1st Visits*	*Return Visits*	*1st Visits*	*Return Visits*
Pulmonary Adult :—						
(a) Advanced	244	1,713	129	1,262	3	34
(b) Minimal Lesions	16	49	22	40	—	—
Healed	12	57	11	48	—	5
Primary	1	1	17	19	77	101
Miliary	—	2	—	2	1	6
Glandular	10	35	20	59	10	27
Abdominal	1	1	1	3	—	2
Bones and Joints	—	6	—	2	—	—
Genito Urinary	—	—	1	—	—	—
Central N. System (Meningitis) ...	—	—	—	1	1	1
Pleural: Effusion	14	46	5	22	1	8
Pleurisy—Dry	19	40	8	23	—	1
Spont. Pneumothorax	—	—	—	1	—	—
Mediastinum :—						
(a) Lymphosarcoma	1	—	—	—	—	—
Cardiac Diseases (hypertension Congestive Failure)	33	73	9	36	—	—
Mitral Stenosis	2	—	2	—	1	—
Congenital Heart Deformity ...	—	—	—	—	1	1
Papilloma of Larynx	—	—	1	3	—	—
Chr: Bronch: and Emphysema ...	64	164	33	54	15	15
Acute Bronchitis	6	12	6	11	13	9
Whooping Cough	—	—	—	—	6	15
Pneumonia and Pneumonitis ...	6	12	—	—	1	9
Bronchiectasis	14	36	10	30	14	26
Lung Abscess	—	12	—	4	—	2
Bronchial Growth N.G.	2	8	—	—	—	—
Pulmo : Fibrosis Cause	41	107	19	48	—	—
Allergic Lung Disease	40	96	26	56	53	104
Air Cysts	2	2	—	3	—	—
Atelectasis	—	—	—	—	1	1
Thyrotoxicosis	1	1	—	—	—	—
Tropical Eosinophilia	—	2	1	4	3	5
Investigation Cases (No. Pul. Lesion)	63	70	45	42	25	26
Other Diseases	41	46	31	53	14	16
TOTAL ...	633	2,591	397	1,826	240	414

TABLE II

Treatment

	Males	*Females*	*Children*	*Total*
Cases Admitted	216	151	32	399
Deaths	16	5	1	22

TABLE III

Operations

Aspiration of Chest (Simple Effusion Empyema)	58
Phrenic Crush	10
A.P. *(a)* In-patients	—
(b) Out-patients	172
P.P. *(a)* In-patients	314
(b) Out-patients	4783

73. During the past ten years the death rates on account of tuberculosis have been as follows:—

Year	*Deaths per 100,000 population*
1948	61
1949	68
1950	53
1951	49
1952	40
1953	28
1954	25
1955	24
1956	25
1957	24

Enteric Fever

74. The number of cases of enteric fever notified in 1957 was 76 equivalent to an incidence rate of 0.13 per 1,000 of the population as compared with 149 cases in 1956.

75. The number of deaths amongst these 76 cases was 3 giving a case mortality of 3.95 per cent as compared with 5.37 per cent in the previous year.

76. The following figures show the incidence of Enteric Fever over the past six years:—

Year	*No of cases notified*	*Rate per 1,000 of population*	*Case mortality per cent*
1952 ...	252	0·505	7·54
1953 ...	108	0·21	10·18
1954 ...	88	0·16	11·36
1955 ...	66	0·12	16·66
1956 ...	149	0·26	5·37
1957 ...	76	0·13	3·95

Diphtheria

77. During the year 45 cases of this disease were notified, giving an incidence rate of 0.07 per 1,000 of the population. The number of deaths among the 45 cases was 4, giving a case mortality of 8.89 per cent.

78. The following figures indicate the number of cases of diphtheria notified, the incidence rate and the case mortality rate for the past six years:—

Year	*No of cases notified*	*Rate per 1,000 of population*	*Case mortality per cent*
1952 ...	73	0·145	13·70
1953 ...	62	0.12	6·45
1954 ...	66	0·12	7·57
1955 ...	67	0·12	19·40
1956 ...	89	0·15	12·36
1957 ...	45	0·07	8·89

Malaria

79. During the first three months of the year a mild epidemic of malaria was discovered in the Black River District mostly in the triangle formed by Gros Cailloux, Canot, Camp Creoles, Camp Creoles had been left unsprayed at the request of the Entomologist, who on January 10th reported to the Malaria Survey Officer that he believed there to be some cases of malaria present. On the 11th January 127 smears were collected from persons of all ages. Between the 11th January and the 20th February, 837 smears were taken in the Gros Cailloux, Camp Creoles area and forty one were found to be positive and all were for P. *falciparum*.

In Gros Cailloux nineteen positives were found and it is of interest to record that their distribution was:—

One house produced four cases,
One house produced three cases,
Four houses produced two cases each, and four houses produced one case each.

Although A. *Gambiae* has not yet been definitely established as the remaining malaria vector presumptive evidence was obtained during this outbreak. One Field Worker, on night catching was bitten by approximately 40 A. *gambiae* during the night of 14th January at Camp Creoles. He reported sick on the 29th January and his blood was positive for P. *Falciparum*. Unfortunately this batch of A. *gambiae* was not dissected.

Malaria Survey

80. During 1957, 58,122 blood smears were examined, 94 of which were positive giving 77 P. *falciparum* infections, 6 P. *vivax*, infections, 2 P. *malariae* infections, one mixed and 8 species unidentified.

For 1956 the figures were 50,344 smears examined of which 121 were positive, 40 for P. *falciparum*, 61 P. *vivax*, 5 for P. *malariae*, 2 mixed and thirteen unidentified species.

The 86 identified smears found in 1957 were discovered in the following districts:—

Black River	67
Plaines Wilhems	5
Rivière du Rempart ...	5
Grand Port	4
Port Louis	2
Flacq	2
Moka	1

The incidence of discovery by month was:—

January	25
February	27
March	10
April	8
May	7
June	1
July	5
August	2
September ...	Nil
October	Nil
November	1
December	Nil

Infant Survey

81. 23,998 smears were examined and three were found to be positive.

For comparison the returns for this survey for the last five years are submitted.

Year	*No. smears exam :*	*Positive*	*ST*	*BT*	*QT*	*Parasite rate %*
1953 ...	17,337	4	—	—	4	0·023
1954 ...	12,663	32	19	5	8	0· 25
1955 ...	13,252	26	24	1	1	0· 2
1956 ...	23,506	18	11	7	—	0·076
1957 ...	23.998	3	3	—	—	0·013

Only two positive smears were obtained from children under one year.

Island Survey

82. This survey has now been held three times; one thousand blood smears were taken from each of the eight districts between the last week in April and the first week in May.

The following tahle shows the results of these surveys :—

Year	*Positive From*								
	Port Louis and Moka	*Pamplemousses*	*Rivière du Rempart*	*Flacq*	*Grand Port*	*Savanne*	*Black River*	*Plaines Wilhems*	*Total*
1954	5	9	10	8	2	7	15	9	65
1956	2	Nil	1	5	4	Nil	11	1	24
1957	3	1	Nil	Nil	Nil	Nil	5	Nil	9

It was decided not to repeat this survey for the year 1958 since the emphasis is on finding the positive cases treating them and the house contacts. The examination of 8,000 smears takes about six weeks therefore, the positives are not reported soon enough to the treatment teams for prophylactic treatment to be undertaken immediately.

83. *Smears received from Doctors, Hospitals, Dispensaries.* 167 smears were received from the above sources and thirteen of which were positive, nine for *P. falciparum,* three for *P. vivax* and one for *P. malariæ.*

In 1956, 225 smears were received of which thirty were positive— *P Falciparum* six, *P. vivax* twenty three and one mixed *P. falciparum* and *P. vivax.*

Summary of work of the Malaria survey unit

Type of Survey	*Smears exam.*	*Positive*	*P. falci :*	*P. vivax*	*P. malar :*	*Mixed*	*U. S.*
Infant Survey ...	23,998	3	3	—	—	—	—
Special Survey ...	721	—	—	—	—	—	—
Drs. Hops. Disps, ...	167	14	9	3	1	—	1
Contacts and Visits ...	643	33	29	2	—	—	2
Special Surveys ...	32,593	44	36	1	1	1	5
TOTAL ...	58,122	94	77	6	2	1	8

The cases infected with P. *falciparum* showed a gametocyte rate of 52 per cent. The P. *malariae* cases also showed gametocytes but none of the P. *vivax* cases exhibited them.

Routine Spraying

84. During the year all buildings in the following areas were treated twice :—

(a) Whole the Black River District.
(b) The coastal area of the Grand Port.
(c) Part of the coast area of the Savanne (i.e. the area contiguous to the Black River District).

In the following areas the buildings were treated once :—
(a) The remainder of the coastal area of Savanne District.
(b) The lower part of Plaines Wilhems District.
(c) The outskirts of Port Louis.

Emergency spraying was carried out at Grand Bay, Calebasse, Mon Loisir, Poste de Flacq and Central Flacq.

In addition to the routine and emergency spraying, residual spraying was carried out in many buildings such as Public Markets, Hospitals, Orphanages etc. In hospitals and orphanages the beds and mattresses were dusted with BHC powder 1 per cent.

Leprosy

85. No new case was notified during the year under review and it is now clear that the problem of leprosy has been solved.

Poliomyelitis

86. 3 paralytic cases were notified in 1957.

(B.) Food in Relation to Health and Disease

87. The relation between food and health is of the greatest importance here as elsewhere. In common with all tropical countries, the premises where articles of food are stored, prepared and sold in Mauritius, do not always comply with the best standards and itinerant hawkers whose numbers are out of proportion to the population constituted a constant menace. Excluding markets and slaughterhouses, which are under the incessant supervision of representatives of the public health services, food premises were inspected on 19,047 occasions during the period under review.

88. Sophistication of milk is so current that this essential commodity continued to be subjected to special control. It is gratifying to point out that appreciable improvements have been conspicuous in the town areas following the establishment of a milk Control Unit in 1953. During the year under review, this Unit submitted 102 samples to the Government Chemist for analysis, out of which 34 per cent did not comply with the standards laid down by law.

89. There are six public and one private abattoirs. The public slaughter-houses administered by the Municipality of Port Louis, the Town Councils of Curepipe and of Beau Bassin—Rose Hill as well as the Government slaughter-house at Flacq are each controlled by a qualified Veterinary Surgeon. In other places supervision rests with the sanitary staff. There are 12 markets in the Colony.

90. The inspection of imported foodstuffs is carried out by the Port Health Inspector. The items listed below were found unfit for human consumption or for delivery and were seized :—

20	bales dried fish (*snoek*)
38	cartons Bourn Vita
1	tin Cocoa Rountree
12	bottles Lemon Squash
36	tins jam
2,640	tins condensed milk
1,061	kilo dried prawns
376	tins salmon
1	bag flour
201	tins processed peas
129	boxes Gruyere cheese
16	packets biscuits
72	balls cheese
28	pounds ham
816	bars chocolate.

(C). General Measures of Sanitation

91. For sanitation purposes, Port Louis is divided into six sections, Plaines Wilhems District in two divisions of two sections each and the remaining districts into seven divisions. The inspections made by the health staff during the year are listed in Table VI.

92.—*(a) District of Port Louis.*—The Health Office for the district of Port Louis is administered by a Senior Medical Officer of Health who is also Port Health Officer. His staff consisted of one Senior Health Inspector, seven Health Inspectors, and six disinfectors. The Port Health Officer is also responsible for anti-rodent measures for which he has a staff of thirteen.

(b) The number of rats caught by trapping was :—

	1956	*1957*
Rats...	5,017	4,462
Mice	1,679	2,311
Musks	139	79
Total ...	6,835	6,852

Most of the deratting operations are now carried out by poison treatment, which means that infestations are completely cleared without any traces of rodents alive or dead being seen. The figures quoted above therefore do not convey an accurate idea of the actual destruction taking place.

93. *Plaines Wilhems District.*—All the work is supervised by a Senior Medical Officer of Health who has Health Officers in Curepipe, Vacoas and Rose Hill.

D. Port Health and Quarantine

94. Port Louis is the only seaport in Mauritius for ocean-going-vessels. Health measures in the port area are directed by the Medical Officer of Health for Port Louis, assisted by a Port Health Inspector. There is a well-equipped Disinfecting Station to carry out disinfection and fumigation. Under the International Sanitary Regulations 1951, Port Louis is an approved and designated port for the issue of deratting and deratting exemption certificates. Four deratting and eight deratting exemption certificates were issued during the year. The number of vessels admitted to pratique during the year is given in Table. No passenger coming from abroad was detained on account of any of the quarantinable diseases.

95. The airport is in the south of the Island at Plaisance, The District Medical Officer, assisted by a Sanitary Inspector, is responsible for all sanitary measures at the airport. 166 civil aircraft arrived in the Colony with 3,007 passengers of whom 321 coming from infected areas were put under surveillance. All planes were disinsected on reaching and before leaving the airport.

E. Water Supplies

96. Work continued on the development of the Colony's water supplies :—

(a) Mare-aux-Vacoas Supply.—This supply is operative in the districts of Plaines Wilhems, Moka, Black River, part of Port Louis, the higher parts of Grand Port and Savane and the Vallée des Pretres and Montagne Longue areas. Consumption reached about 8,300,000 gallons per day at the end of 1956. The area of the filters at La Marie was increased by 10,600 square feet, bringing the total filtering area to 150,600 square feet. Three more filters were under construction. A new chloronome was added to the two in service.

In the Plaines Wilhems area, the supply of Quatre Bornes, Rose Hill and Beau Bassin was further improved by laying new mains from Vacoas Reservoir to Palma and to Candos and Rose Hill reservoirs, and from Rose Hill reservoir, towards Beau Bassin. In the Moka area the supply of St. Pierre, Bois Cheri and adjoining localities was improved by laying a new main from Alma Reservoir to St. Pierre. In the Black River area the supply was extended to Coteau Raffin.

(*b*) Piton du Milieu and Nicolière.—Filters for 4,000,000 gallons per day at Piton du Milieu and 1,000,000 gallons per day at Nicolière are still under construction. In Flacq district a new service reservoir of 200,000 gallons capacity at Bonne Mère was brought into service for Centre of Flacq and surrounding localities, a new 8″ main being laid from the reservoir to Centre of Flacq. A new main was also laid from L'Unite to Belle Rose Reservoir and from Belle Rose reservoir to Bel Air.

In Pamplemousses and Rivière du Rempart districts the supply was extended to Calebasses and Powder Mills.

In Savanne the supply was extended to Benares, Rivière des Anguilles and St. Aubin and in Grand Port district to Riche en Eau and Mahebourg.

(c) Riviere des Galets Supply (Savanne).—The dam on Rivière des Galets was completed. Laying of mains towards Mont Blanc, Chemin Grenier and Surinam was continued.

F. School Health Service

Work of the School Medical Officer

97. 161 primary schools were visited. The following number of pupils were examined :—

Entrants	...	12,441
Specials	...	1,527
Re-exams	...	2,758
Intermediate	...	4,310

13.5 per cent of the Entrants were classified as being of "Poor General Condition", 6.6 per cent required medical treatment.

Below is a summary of the important findings district by districts. (Entrants only).

District	*No examined*	*Poor General Condition*	*Anaemia*	*Bitot's*	*Scabies*	*Otorrhoea*
Grand Port and Savanne ...	1,835	254	57	15	1	15
Average %		13·8	03·1	0·7	0·05	0·7
Moka Flacq	2,140	356	53	12	8	6
Average %		16·6	2·4	0·5	0·3	0·2
Pomplemousses and Rivière du Rempart ...	2,559	355	38	20	5	32
Average %		13·8	1·4	0·7	0·1	1·2
Plaines Wilhems	3,163	415	48	26	26	21
Average %		12·7	1·4	0·8	0·8	0·6
Black River	225	53	8	1	7	1
Average %		23·5	3·5	0·4	3·1	0·4
Port Louis	2,519	244	20	7	7	18
Average %		9·6	0·7	0·2	0·2	0·7

98. *Examination of School Staff.*—Forty-two teachers and thirty four school servants were examined for employment by the Education Department, and 412 candidates selected for admission to the Teachers Training College.

99. *Government Secondary Schools.*—90 Entrants at the Royal College, 93 Entrants at the Royal College School and 68 Entrants at the Queen Elizabeth College were examined.

100. *Lectures.*—Lectures on Health Education were given weekly throughout the year to the Students of the Teachers Training College.

Work of the School Nursing Staff

101. The School Nurses and the Health Workers visited all schools for cleanliness and Health Surveys.

102. *Cleanliness Survey* of 85,624 pupils examined :—

7.8% had dirty finger nails
10·4% had nits
3·4% had nits and lice
7·7% did not have a handkerchief or a clean piece of cloth.

The corresponding percentage figures for 1956 were :—

8·1, 15·0, 6·1, 9·4 respectively.

103. *Cleanliness Campaign.*—During the year 920 pints of concentrated "Gammexane Solution" (with instructions to dilute before use) were distributed to all schools.

104. *Health Survey.*—803,888 pupils were examined. 4,140 of them were referred to the School Medical Officers.

105. *Follow-up Treatment.*—637 visits were paid to all schools for "Follow-up of pupils under treatment". 11,105 pupils were examined and 2,700 were treated.

106. *Vision Survey.*—With the help of the Nutrition and Health Assistant 167 schools were visited for distance vision surveys of pupils in the IIIrd and VIth Standards. 20,025 were examined and 367 were referred to the School Medical Officers.

107. *Minor Ailments and Firsl Aid.*—Where necessary treatment was given to pupils in schools for minor ailments and stock of first aid materials in schools were maintained. Eleven schools were provided with new First Aid Cabinets.

Nutrition

108.—*(a)* At the end of the year Approximately 99 per cent of the pupils in attendance were taking their milk ration. 3,939 pupils were receiving a double ration of milk (46 grams skimmed milk powder) and 8 yeast tablets daily at school. In addition, 1036 pupils were also receiving a supplement of Vitamins A and D in the form of Halibut Oil Capsules or Cod Liver Oil.

(b) The Milk Officer and the Nutrition and Health Assistant (officers of the Education Department) supervised the running of the Milk Scheme. They paid 709 visits to all the primary schools and had instructions to report any defects in the state of cleanliness of school servants who prepared the milk and the utensils.

(c) 59 samples of milk being distributed to the pupils were taken during the year to the Government Chemist for analysis to estimate their nutritive value.

(d) 3,118 pupils were weighed and measured during the year. Those grossly underweight and those not gaining weight satisfactorily received appropriate treatment.

PART V

Maternal and Child Health

109. The scheme for the expansion of the maternal and child health services in rural areas which was commented upon in last year's report continued to be implemented.

During the year a further 3 Centres were opened :—

Goodlands Social Welfare Centre in *March*

Brisée Verdière Social Welfare Centre in *July*

Triolet Social Welfare Centre in *October*.

Two Government Midwives have been appointed to each Centre to cater for the requirements of the Districts concerned.

110. There was a considerable increase in the work supervised by the Superintendent of Midwives. Attendances at the various antenatal clinics which are under her direct control amounted to 15,315 and the midwives posted to those clinics conducted 4,430 confinemenis (4,083 in 1955). The Superintendent and Assistant Superintendent of Midwives personally visited 1,746 newly confined women in their homes to give them advice and attention and to guide them on the hygiene and feeding of their babies. This service which was at first only tolerated by the people seems now to be well received and much good has come of the visits made.

111. The Principal Matron holds three ante-natal clinics and a summary of the work performed by her is given below :—

(a) Eastern Dispensary, Port Louis :—

New cases	2,013
Re-attendances	7,878
TOTAL ...	9,891

(b) Bel Air Dispensary :—

New cases	437
Re-attendances	1,896
TOTAL ...	2,333

(c) Medine—Camp-de-Masque :

New cases	157
Re-attendances	791
TOTAL ...	948

112. The Mobile Ante-Natal Unit had to bear a fair share of the work, the number of new cases seen being 2,683 and the re-attendances amounting to 7,503.

113. The district midwifery service based on the Civil Hospital, Port Louis produced record figures which are detailed hereunder :—

(a) Ante-Natal Clinic :—

New cases	2,481
Total attendances ...	12,803

(b) District Midwifery Service :—

Confinements	1,144
Ante-natal visits... ...	1,178
Post-natal visit	16,120

(c) Ward Work :—

Admissions	2,010
Confinements	1,703

114. The activities of the Maternity and Child Welfare Society are listed below :—

	1956	*1957*
Confinements	2,931	3,063
Attendances of women at consultations ...	5,992	5,212
Attendances of infants at consultations ...	8,160	—
Attendances of infants at Centres for weighing and supervision :—		
(a) First attendance	2,884	2,777
(b) Re-attendance	16,677	16,364
Visits to infants	1,885	1,714
Average number of infants receiving milk daily	1,104	1,054
Average number of litres of milk distributed daily	528	510

115. It is a routine to take blood for serological tests from women attending the ante-natal clinics for the first time. Any case requiring treatment is referred to the hospital on which is based the centre attended by the woman. Another routine at the clinics is the issue of iron and yeast tablets. Cod liver oil and vitamin preparations are given under supervision.

PART VI

Prisons

116. The total number of prisoners admitted into prisons during the year was 2,069 and the daily average population was 657,12 (including the Borstal institution).

117. The general health of the prisoners was good on the whole, influenza in winter and enteritis in summer remaining the prevailing diseases. On admission 20 prisoners were suffering from scabies, 31 from Venereal diseases and 4 from deficiency states associated with defective nutrition.

PART VII

The Dependency of Rodrigues

118. The vital statistics are as follows :—

Area of Rodrigues : 40 square miles

The estimated population on the 1st January 1957 was	16,024
The excess of births over deaths during the year amounted to	562
The excess of civilian departures over arrivals amounted to	61
Estimated population on 31st December, 1957	16,525

The classification of the population is as under :—

	Males	*Females*	*Total*
General Population	7,988	8,264	16,252
Indo-Mauritian Population ...	164	109	273
	8,152	8,373	16,525

BIRTHS

Males : Legitimate	317	
Natural	79	
		396
Females : Legitimate ...	295	
Natural	91	
	386	
		782
Birth rate per 1,000 of population (based on mid-year population) ...		48·2

DEATHS

Males	113	
Females	107	
		220
Death rate per 1,000 of population (based on mid-year population)...		13·6

AGES AT DEATH

	Males	*Females*	*Total*
Under one year	49	46	95
1 year and under 5 years	23	27	50
5 years and under 10 years ...	—	3	3
10 years and under 20 years ...	4	2	6
20 years and under 45 years ...	9	11	20
45 years and under 65 years ...	14	3	17
65 years and over	14	15	29
TOTAL ...	113	107	220

INFANTILE MORTALITY

The number of deaths of infants under one year was 95.

The infantile mortality rate was 121,5 per 1,000 live births registered during the year.

119. There are three hospitals at Rodrigues. The main one at Port Mathurin with 40 beds has now reached the final stage of decrepitude and is due to be replaced by the middle of 1958 by a modern institution of 68 beds which will be erected on a plateau at Creve Cœur. The two other institutions are small village hospitals sited at Mont Lubin and La Ferme with 30 beds between them.

The following figures summarise the work performed in the three hospitals :—

	1956	*1957*
Out patients attendances	47,739	55,283
Admissions to hospitals	2,291	1,880
Antenatal attendances	—	1,206
Hospital deliveries	—	342

1st. December, 1958.

R. RAFFRAY,
Acting Director of Medical Services.

APPENDIX I

Annual Report of the Central Health Laboratory for the Year, 1957

LABORATORY RECEIPTS IN THE FORM OF FEES

The total earnings for the year amounted to Rs 20,372.50

The work of the Laboratory is divided up into the following sections :—

I. Medical Biology
II. Histology
III. Bacteriology
IV. Haematology
V. Serology
VI. Biochemistry

I. MEDICAL BIOLOGY

(a) Faeces (Microscopical)

Total number examined	4,386
Helminths :—	
Heterodera marioni ova	2
Taenia Saginata	4
Enterobius Vermicularis ova	5
Trichuris ova	1,392
Ascaria ova	1,304
Hookworm ova	2,184
Strongyloides larvae	24
Trichostrongyle ova	2
Protozoa :—	
Entamoeba Histolytica	48
Entomoeba Coli	85
Vegetative and precystic amoeba ...	15
Endolimax nana	57
Giardia (Lamblia intestinalis) ...	178
Chilomastix mesnili	19
Trichomonas intestinalis	61
Blastscystis hominis	681

(b) Urine (Microscopical)

Total number examined	3,413
Pus cells	686
Casts	461
Crystals	582
Red blood cells	578
Trichomonas vaginalis	42
Schistosoma haematobium	130

(c) Urine for Pregnancy (Male Toad Tests)

Total number examined	2,176
Number of positives	846

(d) Semen

Total number examined	16

(e) Pus Scrapings Discharges 8
Total number examined
(f) Hydrocele Fluid for micro-filariæ ... 2

II. HISTOLOGY

Biopsy and Morbid histological examinations were made on 519 specimens of material.

Head and Neck :—

Brain :—
- Normal 2
- Arachnoiditis 1

Scalp :—
- Dermoid Cyst 1
- Folliculitis 1

Nose :—
- Granulation tissue 2
- Non Specific granuloma 1
- Lymphosarcoma of nasopharynx ... 1
- Basal Cell Carcinoma 1
- Squamous Cell Carcinomo 1

Eye :—
- Adenoma ot iris 1
- Medullo-epithelioma 1
- Secondary Carcinoma deposit probably from hyper nephroma 1

Maxilla ;—
- Capillary angioma 1
- Squamous carcinoma 3

Salivary:—

Glands :—
- Chronic Inflammation 1
- Mixed Paratid tumour 4
- Cyst of the Parotid 1

Cheek :—
- Lipoma 1
- Benign ulcer 1
- Papilloma 2
- Squamous Carcinoma 1

Ear ;—
- Mastoiditis 1

Mouth ;—
- Non Specific granuloma 1
- Squamous carcinoma 1

Lips :—
- Squamous Carcinoma 1
- Angioma 1

Chin :—	
Haemangioma	1
Tongue :—	
Papilloma	2
Palate :—	
Fibrosarcoma	1
Anaplastic carcinoma	1
Gum :—	
Epithelioma	2
Gum ;—	
Benign epulis	2
Gingivitis	1
Fibroma	1
Throat :—	
Non Specific inflammatory membrane ...	1
Larynx :—	
Epithelioma of vocal cord	1
Squamous carcinoma	1
Granulation tissue	1
Jaw :—	
Adamantinoma	1
Neck :—	
Malignant melanoma	1
Cyst	1
Thyroid :—	
Adenoma	5
Papillary adenocarcinoma	1
Thorax :—	
Axilla :—	
Abscess (non specific)	1
Secondary deposit of undifferentiated Carcinoma	1
Breast : —	
Normal	4
Chronic Cystic Mastitis	8
Fibrosing Adenosis	1
Adenoma	1
Fibroadenoma	10
Fibroma	2
Duct Carcinoma	1
Scirrhous Carcinoma	4
Encephaloid Carcinoma	3
Lymphosarcoma	1
Abdomen :—	
Abdominal Wall :	
Squamous Carcinoma	1
Fibro-adipose tissue	1

Abdominal cavity :—	
Simple benign cysts	1
Congested omentum	1
Tuberculous peritonitis	1
Stomach :—	
Normal	4
Gastritis	1
Benign ulcer	3
Malignant ulcer	1
Benign duodenal ulcer	1
Scirrhous carcinoma	1
Adenocarcinoma	1
Intestines :—	
Anaplastic Carcinoma of the small intestine	1
Normal rectum and colon	2
Undifferentiated Carcimona of the colon ...	1
Diverticulitis	1
Adenocarcinoma of rectum	8
Anal papilloma	1
Lymphosarcoma of rectum	1
Fistula in ano	2
Perineal fibroma	1
Ischio-rectal granuloma	1
Chronic iuflammation of anus ...	3
Appendix :—	
Normal	2
Chronic appendicitis	7
Sub-acute appendicitis	1
Acute appendicitis	1
S. Haematobial appendicitis	1
Liver :—	
Normal	1
Multilobular cirrhosis	1
Spleen :—	
Normal	1
Kidney :—	
Lower nephrom Nephrosis	1
Hydronephrosis	3
Suprarenal glands :—	
Normal	1
Pelvis :—	
Urinary Bladder :—	
Chronic cystitis	1
Carcinoma	4
Ureter :—	
Adeno carcinoma	1
Prostate :—	
Benign hypertrophy	5
Fibrous atrophy	1
Adeno carcinoma	1

Testes :—	
Chronic hydrocele	1
Penis :—	
Papilloma	1
Ovary :—	
Normal	3
Follicular cysts	4
Cyst of the solid alveolar type ...	1
Fibroma	5
Papillary Cystadenoma	2
Granulosa cell carcinoma	1
Vagina :—	
Squamous carcinoma	1
S. haematobial papilloma	1
Uterus :—	
Normal endometrium	23
Hyperplasia of endometrium ...	15
Endometritis	1
Fibroma	2
Fribromyoma	5
Adeno carcinoma	3
Hydatidiform mole	1
Blood clots	4
Products of conception	5
Cervix :—	
Normal	4
Chronic Cervicitis	25
Acute cervicitis	1
S. hæmatobial cervicitis	2
Fibroma	2
Polypus	3
Squamous Carcinoma	14
Adeno carcinoma	2
Fallopian tubes :—	
Chronic salpingitis	3
Limbs :—	
Hæmangioma of finger	1
Dermoid Cyst of finger	1
Lipoma of hand	1
Ganglion of finger	1
Fibrosarcoma of humerus	1
Chronic abscess and sinus of thigh and hip	4
Neurofibroma of leg	1
Benign ulcer of leg	1
Varicose ulcer	1
Neurofibroma of leg	1
Malignant melanoma of foot ...	2

Skin :—

Abscess	1
Fibroma	2
Sebaceous cyst	3
Inflammation	3
Chronic specific granuloma	1
Callosity	1
Wart	7
Keloid	2
Papilloma	5
Lipofibroma	2
Multiple lipomatosis	1
Nævus	2
Basal Cell Carcinoma	3
Squamous Cell Carcinoma	1

Spinal Cord and Nerves :—

Meningioma of the cord	1
Non Specific diffuse myelitis ...	1
Neuroma	2
Sympathetic ganglia	8
Meningocele	1
Spinal neurofibroma	1

Blood Vessels :—

Thrombophlebitis	1
Thromboangiitis abliterans	1
Endarteris deformans	1
Aneurysm of Brachial artery ...	1

Bone :—

Normal	6
Exostosis	4
Cysts	3
Tuberculosis	1
Granulation tissue in spine	1
Osteoclastoma	3
Sarcoma	2

Cartillage :—

Normal	1
Chondroma	2
Intervertebral Disc	1

Joints and Synovia :—

Osteoarthritis	1
Chronic Arthritis	5
Tuberculous Arthritis	1
Chronic bursitis	1
Normal synovia	1
Chronic synovitis	20
Rheumatoïd synovitis	1
Tuberculosis synovitis	3

Muscles and Tendons :—	
Fibroma	1
Myositis Ossificans	1
Myositis	4
Old Hæmatoma	1
Tenosynovitis	1
Ruptured Tendo-Achilles	1
Lymph Glands :—	
Normal	3
Chronic Adenitis	6
Lymphosarcoma	3
Hodgkin's Disease	1
Tuberculosis adenitis	15
Secondary deposit of Carcinoma... ...	1
Miscellaneous :—	
Material from stool-structureless ...	1
Thumb nail (normal)	1
Lympho-endothelioma of back ...	1
From Unknown Sites :—	
Spindle cell sarcoma	1
Non specific Granulomas	2
Fibro-lipoma	1
Adipose tissue	2
Ganglion	1
Fibrous tissue	1
Granulation tissue	2
Angioma	1
Tuberculous granuloma	2
Cystology :—	
Pleural fluid :—	
Negative for malignancy	2
Ascitic fluid:—	
Negative for malignancy	2
Sin scrapings :—	
Negative for dermatophyte	1
Animals :	
Patchy liver necrosis	1
Udder abscess in cow	1
Liposarcoma	1

III. BACTERIOLOGY

A. Direct Microscopical Examinations

Total number examined	2,539
(a) Sputum	
Total number examined	2,232
Mycobacterium Tuberculosis	223
(b) Cerebro-Spinal fluid	
Total number examined	54
Pneumonococcus	5

(c) Throat and Nasal Swabbings

Total number examined	118
Corynebact Diphtheriae	18
Fuso bacterium planti Vincenti... ...	4

(d) Pus, discharges, Scrapings

Total number examined	135
Neisseria gonorrhoae	24
Staphylococcus albus	1
Trichomonas vaginalis	6

B. CULTURES

Total number examined	4,318

(a) Blood

Total number examined	78
Bact. Pyphosum	2
Staphylococcus albus	3
Staphylococcus aureus	4

(b) Faeces

Total number examined	165
Bact. typhosum	1

(c) Urine

Total number examined	1,052
Bact. coli	375
Bact. Alkaligenes	6
Bact. Proteus	26
Bact. Parocolon	28
Bact. anaerogenes	3
Morgan's bacilli	36
Diphtheroids	7
Pseudomonas pyocyaneus	24
Staphylococcus aureus	15
Staphylococcus albus	9
Streptococcus haemolyticus	4
Streptococcus viridans	2
Streptococcus faecalis	9

(d) Sputum

Total number examined	58
Freidlanderi	4
Bact. Proteus	1
Diphtheroids	2
Streptococcus pneumoniae	4
Neisseria catharralis	3
Streptococcus haemolyticcus	7
Staphylococococcus aureus	2
Micrococci Tetragenes	7
Mycobacter tuberculosis	2

(e) Cerebro-spinal fluid

Total number examined	54
Streptococcus pneumoniae	5
Staphylococcus albus	1

(f) Throat, Nasal Swabbings

Total number examined	1,133
Corynebacterium Diptheriae	95
Diphtheroids	28
Staphylococcus aureus	95
Staphylococcus albus	3
Streptococcus haemolyticcus	87
Streptococcus viridans	2
Monilia albicans	48

(g) Pus, discharges, scrapings

Total number cxamined	1,122
Bact. coli.	29
A typical Bact. Coli	8
Bact. proteus	26
Bact. Alkaligenes	8
Bact. morax Axenfeld	2
Morgan's bacilli	12
Pseudomonas pyocyaneus	25
Dodeslein's bacilli	21
Diphtheroids	60
Staphylococcus aureus	197
Staphylococcus albus	324
Streptococcus haemolyticcus	28
Streptococcus viridans	4
Monilia albicans	11
Bact. fried landeri	6
Corynebacterium Diphtheriae	1

(h) Vaccine

Stock T.A.B. Prophylactic Vaccine ...	10½ lits.
Various Autogenous vaccines	29

(i) Miscellaneous

Sensitivity to Antibiotics ...	... 290 cases
Food	1
Orange powder	1
Bone (from bone bank)	44
Broth for Sterility Test	2
Materials for culture	12
Water analysis	448
Inoculation to guinea pigs.	13
Nasal swabs—Hansen Bacilli	5

IV. HAEMATHOLOGY

Total number examined	9,071
Haemoglobin per cent	1,292
Red Blood cells connt	902
White blood cells count	485
Differential count	504
Blood sedimentation rate	681
Stock sera ABO grouping	1,247
Blood groupings	1,561

X Matchings	855
RH Factor	327
RH Antibodies	23
Packed cell volume	705
Mean Corpuscular haemoglobin ...	4
Mean Corpuscular concentration ...	6
M.C.V.	3
M.C.D.	3
Platelelets counts	44
Reticulocyte counts	60
Bleeding time	140
Coagulation time	140
Malarial Parasites	2
Microfilariae	72
Bone marrow	3
Coombes test	7
Fragility test	2
L.E. cells	3

PRINCESS MARGARET ORTHOPAEDIC CENTRE

Total number examined	1,514
Haemoglobin estimations	643
Red blood cell counts	134
White blood cell counts	148
Differential leucocyte counts	143
Blood sedimentation rate	291
Blood groupings	106
Cross-matching	44
Bleeding time	2
Coagulation time	2
Film for malarial parasites	1

V. SEROLOGY

I. BLOOD

(a) Agglutination test

Total number of specimens submitted for agglutination tests	662
Significant agglutinins for Bact. Thyphosum "H"	215
Significant agglutinins for Bact. Thyphosum "O"	57
Significant agglutinins for Bact. Parathyphosum "A"	53
Significant agglutinins for Bact. Parathyphosum "B"	32
Significant agglutinins for Bact. Proteus thyphosum "OX 2"	6
Significant agglutinins for Bact. Proteus thyphosum "OX 19"	9
Significant agglutinins for Bact. Proteus thyphosum "OX k"	2

(b) Kahn Tests

Doubtful	347
+	372
++	488
+++	371
++++	163
Negative ...	14,727
Unsuitable for tests	362
Total ...	16,830

(c) Kline tests

Doubtful ...	294
+	573
++	530
+++	406
++++	210
Negative ...	14,294
Unsuitable for test	347
Total ...	16,654

(d) Wasserman Reactions

Doubtful ...	73
+	80
++	78
+++	75
++++	125
Negative ...	1,471
Unsuitable for tests	131
Total ...	2,033

II. Cerebro Spinal Fluid

(a) Wasserman Reactions

Doubtful ...	1
+	1
++	3
+++	2
++++	3
Negative ...	159
Unsuitable for test	7

(b) Nonne appelt Test

Negative ...	3
Total ...	179

Gonorrhoea Complement Fixation test.

Doubtful ...	3
+	3
++	1
+++	3
++++	5
Negative ...	30
Unsuitable for tests	2
Total ...	47

Blood.

Paul Bunnell's Tests	10

VI. Biochemistry

(a) Urine

Total number examined	2,437
Albumin-Qualitative	1,193
Albumin-Quantitative	32
Glucose qualitative	1,227
Glucose quantitative	125
Acetone	48
Bile pigments	68
Bence Jones Protein	4
Chlorides	3
Hæmoglobin	2
Diastase	3
Ozazone test	1
Urobilinogen	5
Urea	7

(b) Blood

Total number examined	5,669
Urea	1,763
Protein	146
Glucose	3,007
Albumin	125
Globulin	121
Cholesterol	37
Chlorides	26
Calcium	17
Bromides	136
Amylase	2
Prothrombin time	10
Phosphorus	4
Alkaline Phosphatase	37
Acid Phosphatase	44
Sodium	3
Thymol Turbidity Test	28
Uric Acid	9
Van Den Bergh	78
Bilirubin	76

(c) Cerebro-Spinal Fluid

Cells	240
Protein	220
Chlorides	176
Glucose	182

(d) Fæces

Occult Blood	190
Bile pigments	2

(e) Miscellaneous

Fractional test meal	46
Ascitic fluid.	
Protein	3
Pancreatic cysts.	
Ferments	1
Calculi.	
Urinary	8
Renal	1

APPENDIX II

Annual Report of the Victoria Hospital Branch Laboratory

I. MEDICAL BIOLOGY

(a) Blood (microscopical)

Total number examined	28
Blood films for malaria Parasites ...	24
Blood film for microfilariæ	4

(b) Fæces (microscopical)

Total examinations	4100
Helminths :—	
Ascaris ova	1642
Hookworm ova	1815
Trichuris ova	1404
Hymenolepsis Hana	1
Strongyloides larvæ	42
Protozoa :—	
Entamœba Histolytica (vegetative and cysts)	61
Entamœba Coli (vegetative and Cysts) ...	142
Endolimax Nana (vegetative and Cysts) ...	55
Vegetative and prescystie Amœboe ...	42
Giardia intestinalis (Lamblia) ...	255
Trichomonas intestinalis	52
Chilomastix Mesnili	13
No Helminths No Protozoa	598

(c) Urine (Microscopical)

Total examinations	1647
Pus cells	502
Red blood cells	451
Casts	340
Trichomonas Vaginalis	94
Schistosoma Hæmatobium	95

II. BACTERIOLOGY

(a) Sputum

Total number examined	1306
Mycobacter tuberculosis	214

(b) Throat and Nasal Swabbings

Total number examined	71
Corynebact diphtheriæ	11

(c) Pus Discharges, Scrapings

Total number examined	124
Neisseria Gonorrhœa	26
Trichomonas Vaginalis	2

HÆMATOLOGY

Total examinations	9830
Hæmoglobin %	3599
Red blood cells count	1103
White blood cells count	852
Differential count	832
Blood Sedimentation rate	1452
Blood groupings	3142
X Matchings	2038
Mean corpuscular hæmoglobin concentration	1
Platelets counts	30
Reticulocyte counts...	4
Bleeding time	49
Coagulation time	50
Fragility test	1

IV. BIOCHEMISTRY

(a) Urine

Total number examined	665
Albumin qualitative...	439
Albumin quantitative	1
Glucose qualitative	443
Glucose quantitative	33
Tests for acetone	145
Tests for Bile	77

(b) Faeces

Occult blood	31

(c) Fractional Test meal

Total number examined...	46

APPENDIX III

Annual Report of the Civil Hospital Branch Laboratory

(a) Blood (Microscopical)

Total number examined	...	...	62
Malaria film (negative)	...	...	31
Plasmodium Vivax	...	...	1
Microfilariae (negative)	...	...	29
W. Bancrofti ...	...	...	1

(b) Faeces

Total number examined	...	...	3443
Helminths :—			
Ascaris Ova ...	...	...	1133
Strongyloides larvae	...	...	23
Enterobius Vermicularis	...	...	3
Trichostrongyle ova	...	...	1
Heterodera Marioni ova	...	...	3
Hookworm ova ...	...	...	784
Trichuris ova ...	...	...	2113
Protozoa :—			
Entamoeba Coli cysts	...	...	136
Entamoeba Histolityca Cysts...		...	36
Vegetative and Precystic Amoebae		...	72
Giardia (Lamblia) Cysts	...	...	157
Endolimax nana Cysts	...	...	35
Trichomonas intestinalis	...	...	96
Cercomonas ...	...	...	1
Chilomastix ...	...	...	2
Blastocystis ...	...	...	1396
No Helminths, No Protozoa ...		...	301

(c) Urine (Microscopical)

Total number examined	...	...	3979
Casts	...	...	493
Schistosoma haematobium	...	...	428
Trichomonas vaginalis	...	...	168
Microfilariae ...	...	...	1
pus	...	...	1599
Red blood cells ...	...	...	1197
Crystals ...	...	...	735

II BACTERIOLOGY

(a) Sputum

Total number examined	...	...	2564
Mycobacter tuberculosis	...	...	423

(b) Urine

Total number examined	...	...	6

(c) Throat and Nasal Swabs

Total number examined	247
Corynebacteria Diphtheriae	13

(d) Pus, Discharges, Swabbings etc.

Total number examined	315
Neisseria Gonorrhoea	54

(e) Miscellaneous

C.S.F. Count	6
Differential count	1
Sputum for Ent. histolytica	1

III. HAEMATOLOGY

Total number examined	9,542
Haemoglobin estimations	2,925
Red Blood cells count	794
White Blood cells counts	816
Differential counts	810
A.B.O. Groupings	3,528
Cross matchings	2,382
Blood sedimentation rate	618
Bleeding time	12
Coagulation time	13
Reticulocytes counts	3
Platelets	20
L.E. cells count	3

IV. BIOCHEMISTRY

(a) Faeces

Occult blood	2

(b) Fractional Test Meal

Total number examined	98

(c) Urine

Total number examined	4,798
Albumin qualitative...	2,116
Albumin quantitative	20
Glucose qualitative	2,158
Glucose quantitative	115
Bile determination	116
Acetone	119
Specific gravity	74

APPENDIX IV

Annual Report of the Government Chemist for 1957

STAFF

During the year Mr. R. Rivalland continued to act as Government Chemist and Mr. K. Topsy as acting Assistant Government Chemist, until the 3rd October.

Mr. B. Channe Vy holder of the Inter B.Sc. was appointed Junior Laboratory assistant in March and joined this laboratory. He was especially trained in the routine work of the division.

The Acting Government Chemist was again appointed member of the Liquor Licensing Board. He was, on several occasions, called in District Courts to give evidences. The Customs Laboratory was under his supervision.

General Chemical Analyses

During the year, 3,670 samples were received involving 8,852 tests. Table I shows the various Items.

Milk

52 samples were received from the School Medical Officer to check the composition of milk given daily to school boys. On an average these samples were found to be satisfactory.

702 samples were taken by Sanitary Inspectors from milk sellers : 23 per cent were found to contain added water above 10 per cent ; 5 per cent were found to be skimmed milk and 6 per cent were found to contain cane sugar added.

Six samples were jointly analysed at the request of the Magistrates.

POISONOUS CASES

The chief poisonous substance absorbed was lysol—66 cases were detected, next in order of frequency were Petroleum oil, Barbiturates, alkaloids, DDT powder, Mineral acids etc.

Yellow phosphorous was detected in animal poisoning.

WATERS

Potable waters from La Marie, Pailles, Piton du Milieu and Monneron were regularly analysed and reports issued accordingly.

Gandia and Opium

These drugs of addiction have again been largely used. Many plantations of *Cannabis Sativa L.* were discovered.

Cases of opium in the Colony has this year increased in spite of the close check of Customs and Police Departments.

Edible Oils

Every consignment of edible oils received in the Colony was sampled and analysed for the presence of Trycresyl Phosphate. All samples were found fit for human consumption.

The chief edible oils imported were : Cotton seed, Coconut, Soya, Sunflower, Mustard, Maize, ground nut etc. . . . Samples of olive, Castor and Cod Liver oils also were analysed.

Bread

A check was carried out throughout the year on bakeries. Samples of bread were weighed and sent to the laboratory to determine the moisture content. Several cases were prosecuted.

Drunkenness

About 800 samples of urine, blood and stomach wash were received during the year for determination of alcohol.

In 50% of samples forwarded cases of drunkenness were proved.

Miscellaneous

This comprised analyses of vinegars, molasses, honey, motor spirit, Medicinal liquids, dynamite, Orange squash, pyridine, yeast etc.

Table II shows the examinations performed at the Customs Laboratory during the year.

TABLE I

Description	*Samples received*	*Determinations*
Milk	702	3,682
Milk (joint analysis) ...	6	30
Milk (from School Medical Officers	52	156
Waters	60	240
Poisoning Cases (Human) ...	237	325
Poisoning Cases (Animal) ...	25	45
Gandia	197	400
Opium	44	132
Textiles	173	346
Edible Oils	502	525
Power Alcohol ...	53	53
Rum (Warehouse) ...	211	220
Police cases. ...	270	500
Wine	56	112
Wash	27	54
Pharmaceutical drugs ...	41	41
Bread	103	206
Flour	19	38
Miscellaneous ...	98	150
Police cases. (Arson) ...	23	55
Drunkenness. (Urine) ...	29	1,458
Cases from (Blood) ...	17	34
Police. (stomach wash) ...	25	50
Total ...	3,670	8,852

TABLE II

The following articles were tested at the Customs Laboratory during the year 1957.

	Samples
Brandy	35
Rum	5
Cognac	19
Gin	9
Liquor	20
Whisky	91
Wine	216
Vermouth	7
Tincture Auranti	2
Mirabelle	1
Chinese Spirits	3
Vodka	2
Cider	2
Vinegar	18
Miscellaneous Beverages	14
Flavouring Essences	216
Piece Goods	7,544
Wearing Apparel	6,594
Hosiery	805
Haberdashery	1,822
Hats	305
Bed covers	1,266
Blankets	154
Carpets	37
Towels	625
Rugs	20
Knitting Yarn	170
Umbrellas	24
Miscellaneous	280
Local vinegar	99
Country liquor	17,452

APPENDIX V

Report of the Entomologist for the Year 1957
Insect Borne Diseases Division

Nocturnal Activities Cycles of Some Mauritian Mosquitoes

Observations on the nocturnal out of doors activity of Mauritian Mosquitoes were continued during the year.

1. *Anopheles gambiae* Giles

The observations carried out during 1957 have again shown that, though this species normally starts feeding as early as between 1900 and 2000 hours, it gradually reaches its maximum activity between 2300 and 0300 hours with a peak between 0200 and 0300 hours. *A. gambiae* cannot be considered as being a crepuscular species ; it is, in fact, a truly nocturnal one. It was again found that the activity of *gambiae* decreases sharply between 0300 and 0400 hours, then somewhat increases between 0400 and 0500 hours and finally drops very steeply between 0500 and 0600 hours.

The following table shows the results of the observations made in 1957 and the combination of last year's findings with those of this year.

TABLE I

Nocturnal Activity of *Anopheles gambiae* Giles out of doors

Host : Man

Time	*Number of female A. gambiae captured during*	
	14 night catches (1957)	*42 night catches (1956 & 1957)*
1800–1900 hours ...	29	32
1900–2000 ,, ...	195	211
2000–2100 ,, ...	230	264
2100–2200 ,, ...	286	349
2200–2300 ,, ...	255	311
2300–2400 ,, ...	297	406
0000–0100 ,, ...	317	403
0100–0200 ,, ...	321	416
0200–0300 ,, ...	351	454
0300–0400 ,, ...	265	325
0400–0500 ,, ...	310	385
0500–0600 ,, ...	98	113

A. gambiae apparently shows a tendency to attack its bait by successive waves at short intervals. The length of these intervals seems to be related to the density of the mosquito population during the catching period i.e., the whole night. These intervals are long when the population density is low ; they are shorter when this density is comparatively higher.

Figure I gives the actual baiting times of 267 female *gambiae* caught during a low density night at Camp Créoles on 7.1.57. *Figure II*, on the other hand, gives the biting times of 738 female *gambiae* caught during a high density night at Roche Bois on 21.10.1957.

No correlation could be found between the different rhythms of attack and the prevailing atmospheric conditions, i.e., temperature, relative humidity, wind speed and moonlight intensity.

During these and other observations it was noticed that out of the 5 workers carrying out the night catches one (Worker V) was usually highly attractive to *gambiae* while another (Worker A), on the contrary, attracted less mosquitoes.

The following examples may be quoted to illustrate the above. The number of female *gambiae* captured by workers V and A on a total catch of 1,043 (when 5 catches were employed) were respectively 289 and 129 or 27·8 per cent and 12·4 per cent of the total catch. It appears therefore that Worker V is more attractive to *gambiae* than Worker A in the ratio of 2·24 : 1. In catches totalling 1,126 female *gambiae*, the same workers captured 522, 233 individuals respectively while the remainder was taken by another worker. On comparing the respective catches of Workers V and A, the ratio of 2·24 : 1 is again obtained. As both workers are of the same race, same size and colour and show the same zeal in their work, it follows that the only difference between them resides in the odour of the sweat emanating from their respective bodies. In the first case (Worker V), this odour is strongly attractive to *gambiae* and in the other (Worker A), it is less attractive.

A. gambiae may therefore be said to be sensitive to short range attractants of which the odour of sweat of certain human bodies is one.

2. *Anopheles coustani Lav*

Observations have again shown that *A. coustani* reaches the peak of its activity between 19.00 and 20.00 hrs and that this activity then decreases gradually and steadily until 22.00 hrs when it remains almost uniform until 0.500 hrs. It then declines sharply between 0.500 and 6 hours. *A. coustani* may be considered as a more crepuscular than a truly nocturnal species.

The following table gives the results of 46 night observations on the activity of *A. Coustani* carried out out of doors during 1956 and 1957.

TABLE II

NOCTURNAL ACTIVITY OF *A. Coustani* OUT OF DOORS

Results of 46 night catches

Host : Man

Time	*Number of female coustani captured*
1800—1900 hours ...	82
1900—2000 ,, ...	278
2000—2100 ,, ...	177
2100—2200 ,, ...	141
2200—2300 ,, ...	106
2300—2400 ,, ...	105
2400—0100 ,, ...	98
0100—0200 ,, ...	90
0200—0300 ,, ...	85
0300—0400 ,, ...	88
0400—0500 ,, ...	90
0500—0600 ,, ...	39

3. Culex *fatigans* Wied.

It was again observed that Culex *fatigans*, which is a nocturnal species, does not show any marked peak of activity at any particular time of the night. Its attacks are continuous and almost equal in intensity from 19.00 hrs. to 05.00 hrs.

Table III shows the results of 46 night observations carried out out of doors during 1956 and 1957.

4. Culex *tritæniorhynchus* Giles.

The activity of Culex *tritæniorhynchus*, another truly noctural species, starts between 19.00 and 20.00 hrs. and gradually increases so as to reach a peak between 21.00 and 22.00 hrs. This activity then declines somewhat steeply between 24.00 and 01.00 hrs. and again increases to another peak between 02.00 and 03.00 hrs. after which it decreases until dawn.

Results ot the activity cycle of C. *tritaeniorhynchus* in 1956 and 1957 are shown in Table III.

TABLE III

NOCTURNAL ACTIVITY OF *Culex fatigans* AND C. *tritaeniorhynchus*

OUT OF DOORS

Results of 46 night catches

Host : Man

Time	*Number of Females captured*	
	Culex fatigans	*Culex tritaeniorhynchus*
1800—1900 hours ...	13	5
1900—2000 ,, ...	37	38
2000—2100 ,, ...	46	64
2100—2200 ,, ...	60	74
2200—2300 ,, ...	58	59
2300—2400 ,, ...	44	41
2400—0100 ,, ...	47	26
0100—0200 ,, ...	54	37
0200—0300 ,, ...	32	59
0300—0400 ,, ...	43	48
0400—0500 ,, ...	31	25
0500—0600 ,, ...	14	21

5. *Aedes albopictus Skuse*

Aedes albopictus is a diurnal species which sometimes attacks man out of doors during the night. Its nocturnal activity was studied during the year, with the following results. The normal or diurnal activity of this mosquito decreases sharply from 1800 to 2000 hrs, i.e. at sunset, and its nocturnal activity from 2000 to 0500 hrs is almost uniform. Between 0500 and 0600 hrs i.e. at dawn, it reverts to its diurnal cycles.

Table IV gives the results of the above study.

6. *Aedes (Aedimorphus) fowleri* de Charmoy

Ae. fowleri seems to be a crepuscular species. Its activity reaches a peak between 1900 and 2000 hrs and decreases steadily but slowly during the night so as to reach a minimum at dawn.

The nocturnal activity cycle of this mosquito is given in Table IV.

TABLE IV

Nocturnal activity of *Aedes albopictus* and *Ae. (Aedimorphus) fowleri* out of doors.

Host : Man

Time	*Number of females captured*	
	Aedes albopictus (14 night catches in 1957)	*Aedimorphus fowleri (44 night catches in 1956 and 1957)*
1800—1900 hours ...	81	5
1900—2000 ,, ...	24	39
2000—2100 ,, ...	9	16
2100—2200 ,, ...	7	12
2200—2300 ,, ...	2	16
2300—2400 ,, ...	7	11
2400—0100 ,, ...	12	12
0100 0200 ,, ...	6	9
0200—0300 ,, ...	4	3
0300—0400 ,, ..	2	8
0400—0500 ,, ...	3	5
0500—0600 ,, ...	10	1

Preliminary Notes on the host-preference of Mauritian Mosquitoes.

A preliminary study of the host-preference of Mauritian mosquitoes was started during the year under review. The mosquitoes were collected in cowsheds, houses, crevices of rough stone walls enclosing cattle pens and during night catches out of doors. The technique used for the identification of the blood smears obtained from these mosquitoes was that of Uhlenhuth—Weidanz, modified by Rice and Barber, as described by Arnold, Simmons and Fawcett (1946, *U. S. Public Health Reports*, 61 : 1244—1249). The antisera (1 : 8,000) used for the determination of the bloods were received from Messrs. Burroughs—Welcome & Co. Ltd., England.

The following tables show the results so far obtained.

TABLE V

Host Preference of Mauritian Mosquitoes

Species of Mosquitoes	Number of Mosquitoes examined	Number of positive reactions to various antisera: Single reactions: Human	Bovine	Goat	Hen	Dog	Cat	Pig	Horse	Mixed reactions: Human/Bovine	Human/Goat	Human/Hen	Bovine/Goat	Bovine/Hen	Goat/Hen	Human/Bovine/Goat	Human/Bovine/Hen	Number of negative reactions
Outside																		
Anopheles gambiae	298	253	20	—	—	1	—	—	—	14	—	—	—	—	—	—	—	10
Anopleles coustani	137	67	48	3	—	—	—	—	—	10	—	—	—	—	—	—	—	9
Anopheles maculipalpis	19	1	9	5	—	—	—	—	—	1	—	—	—	—	—	—	—	3
Aedes albopictus	36	36	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aedes fowleri	13	6	4	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Culex fatigans	35	25	5	—	—	—	—	—	—	3	—	—	—	—	—	—	1	1
Culex tritaeniorhynchus	56	49	1	2	—	1	—	—	—	—	1	—	—	—	—	—	—	2
Cowsheds																		
Anopheles gambiae	617	22	474	21	5	1	—	—	—	18	3	—	7	2	—	3	1	60
Anopheles coustani	634	10	560	2	—	—	—	—	—	55	—	—	2	—	—	1	—	4
Anopheles maculipalpis	7	—	6	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Aedes fowleri	76	3	60	1	—	—	—	—	—	6	1	—	—	—	—	2	—	3
Culex fatigans	9	1	4	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Culex tritaeniorhynchus ...	124	1	94	1	—	—	—	—	—	13	1	1	—	—	1	10	—	2
Culex thalassius	40	3	22	—	1	—	—	—	—	1	—	1	1	—	—	9	—	2
Houses																		
Anopheles gambiae	23	2	11	—	—	1	—	—	—	—	—	—	—	—	—	—	—	9
Culex fatigans	38	20	1	—	14	1	—	—	—	—	—	—	—	—	—	—	—	2
Stone Wall Crevices																		
Anopheles gambiae	60	2	51	—	—	—	—	—	—	1	—	—	1	—	—	2	—	3
Anopheles maculipalpis	18	1	17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TABLE VI

Results of precipitin reactions and Gonotrophic stage of A. gambiae

Positive reactions to antisera	*Total number of reactions*	Gonotrophic stage															
		Place of collection															
		Outdoors				*Cow-Sheds*				*Houses*				*Stone Wall of Cattle Pens*			
		II	*III*	*IV*	*Total*	*II*	*III*	*IV*	*Total*	*II*	*III*	*IV*	*Total*	*II*	*III*	*IV*	*Total*
Human	279	84	103	66	253	—	—	10	22*	1	1	—	2	—	—	2	2
Cow	556	2	9	9	20	112	212	121	474†	6	5	—	11	7	31	13	51
Goat	21	—	—	—	—	4	3	14	21	—	—	—	—	—	—	—	—
Hen	5	—	—	—	—	—	—	5	5	—	—	—	—	—	—	—	—
Dog	3	1	—	—	1	—	—	1	1	1	—	—	1	—	—	—	—
Human/Cow	33	3	9	2	14	—	3	12	18‡	—	—	—	—	—	—	1	1
Human/Goat	3	—	—	—	—	—	—	3	3	—	—	—	—	—	—	—	—
Cow/Goat	8	—	—	—	—	—	1	5	7	—	—	—	—	—	—	1	1
Cow/Hen	2	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—
Human/Cow/Goat ...	5	—	—	—	—	—	—	2	3§	—	—	—	—	—	—	2	2
Human/Cow/Hen ...	1	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—
Negative reactions to various antisera (§) ...	82	5	5	—	10	17	43	—	60	5	4	—	—	1	1	—	3

*Including 12 undetermined stages
†Including 29 undetermined stages
‡Including 1 undetermined stage
§Antisera tested : human, cow, goat, hen, dog, cat. pig, horse.

It appears from this preliminary study that *Anopheles gambiae* feeds indiscriminately on man and cattle and to a lesser degree on goat, hen and dog. This mosquito seems to be more anthropophilic than zoophilic out of doors.

The 253 man-positive *gambiae* captured out of doors were at the following stages of their gonotrophic cycle.

Stage	*Number of A. gambia*
II (fully fed)	84
III (half gravid) ...	103
IV (gravid)	66

But, as the attractment host was man, it is advisable in assessing the the present preliminary results, NOT to take into account the 84 fully-fed (Stage II) individuals which may have accidentally fed directly upon the collectors at the time of their capture. It seems therefore that the remaining mosquitoes (Stage III and IV) had had a previous human blood meal before attempting to bite the collectors. This would strengthen the view that *A. gambiae* out of doors is more anthropophilic than zoophilic.

2. On the other hand, *A. gambiae* in cowsheds which are one of its preferred resting places, is, as it would be expected, more zoophilic than anthropophilic. It is also interesting to note that more cattle-positive than human-positive *gambiae* were captured in houses. It is evident therefore that prior to entering houses at night to find a resting place where to complete at least part of their gonotrophic cycle, some of these mosquitoes have previously feeding on cattle either outdoor or in cowsheds. In fact, the 11 bovine-positive *gambiae* collected in houses were at stage II(6) and stage III(5) of their cycle.

Precipitin tests with blood-gorged A. *gambiae* collected in outdoor resting places will be carried out next year in order to obtain a clear picture of the host-preference of this important species in its natural environment.

Both *Anopheles coustani* and *A. maculipalpis* seem to be more zoophilic than anthropophilic.

Among the species of *Culex* so far examined, *C. fatigans* though sometimes feeding on birds, seems to have a preference for man. C. *tritaeniorhynchus* appears to feed indiscriminately on both man and cattle.

This study of the host-preference of Mauritian mosquitoes will be continued next year.

Insect Predators of Mauritian Mosquitoes

Only little time could be devoted to the study of this question during the year.

Thanks to the kindness of Prof. H. B. Hungerford, the Hydrometrid recorded in last year's report as a predator of mosquito larvae was identified as *Hydrometra aegyptia* H. & E. This species is very common in marshes with grass-clad borders and occurs mainly in the coastal belt. It is a very

active predator of mosquito larvae, especially those of *Culex* spp. (*C. univittatus* Theob , *C. tritaeniorhynchus* Giles and *C. thalassius* Theob.) It was also observed to prey well upon third and fourth stage larvae of *Anopheles gambiae* Giles.

Prof. R: Poisson has very kindly identified the various species of Notonectids which were collected in ponds, basins and marshes. So far, only one species, *Anisopps vitrea* Sign., has been observed to prey voraciously upon larvae of *Culex fatigans* Wied. & *C. univittatus* Theob. This very common predator has been collected in many localities of the island from sea-level to an altitude of about 1,850 ft. The predatory status of two other species of Notonectids is being investigated.

Nymphs and adults of the Nepids *Laccotrephes annulipes* (Lap.) and *Ranatra grandocula* Berg., were observed to prey upon larvae of *Culex* spp. but their efficiency in this respect cannot be compared to that of Hydrometrids and Notonectids.

Host preference and Maxillary Index of A. gambiae in Mauritius

For the purpose of this study, 182 blood gorged females of *A. gambiæ* were collected from cowshed and out of doors. The maxillary indices of these individuals were determined by the usual dissection technique, and precipitin tests were carried out for the identification of the ingested blood. The average maxillary index of the *gambiæ* population tested was again found to be 15.4 (cf. Mamet. Report for 1956).

TABLE VII and VIII show the results obtained.

TABLE VII

HOST PREFERENCE OF *A. gambiae* COLLECTED IN COWSHEDS AND OUT OF DOORS

Antisera	*Number of A. gambiae showing positive reactions to the antisera*	
	Gambiae collected in cowsheds	*Gambiae collected outdoors*
Human	9	28
Cow	53	36
Goat	19	—
Hen	2	—
Human/Cow	10	12
Human/Goat ...	2	—
Cow/Goat	5	1
Human/Cow/Goat ...	2	2
Human/Cow/Hen ...	1	—
TOTAL ...	103	79

TABLE VIII

MAXILLARY INDEX IN RELATION TO HOST PREFERENCE OF *A. gambiae*

Maxillary Index	*Number of A. Gambiae examined*	*Number of A. gambiae positive for*								
		Human	*Cow*	*Goat*	*Hen*	*Human/Cow*	*Human/Goat*	*Cow/Goat*	*Human/Cow/Goat*	*Human/Cow/Hen*
12.5	1	—	1	—	—	—	—	—	—	—
13.0	2	1	1	—	—	—	—	—	—	—
13.5	10	2	5	1	1	1	—	—	—	—
14.0	6	1	3	—	—	2	—	—	—	—
14.5	27	6	15	3	—	2	—	—	1	—
15.0	27	5	15	2	—	4	—	1	—	—
15.5	39	7	22	4	—	4	—	1	1	—
16.0	18	6	6	3	—	2	1	—	—	—
16.5	26	4	11	4	1	2	—	2	1	1
17.0	11	1	3	1	—	3	1	2	—	—
17.5	11	2	7	1	—	1	—	—	—	—
18.0	2	1	—	—	—	1	—	—	—	—
18.5	2	1	—	—	—	—	—	—	1	—
TOTAL ...	182	37	89	19	2	22	2	6	4	1

The Mean Maxillary index of those individuals showing identical precipitin reactions was determined. Results are given in Table IX.

TABLE IX

Relation between Host preference and maxillary index of *A. gambiae.*

Host of A. gambiae determined by precipitin tests	*Mean maxillary Index of A. gambiae*
Human	14.7
Cow	15.4
Goat	15.6
Hen	15.0
Human/Cow	15.6
Human/Goat	16.5
Cow/Goat	16.5
Human/Cow/Goat	16.2
Human/Cow/Hen	16.5

Mean Maxillary index of population tested = 15.4.

It appears from the above tables that *A. gambiae*, as it occurs in Mauritius, cannot be divided into "paucidentate" or "anthropophilic" type (mean maxillary index : 13.5) and "multidentate" or "zoophilic" type (mean maxillary index : 15). The maxillary index of "anthropophilic" (i.e. human—positive) and "zoophilic" (animal—other than human—positive) *gambiae* in Mauritius are almost identical.

It follows therefore that no relation exists between the maxillary Index of *gambiae* and its host preference in Mauritius.

Longevity of A. gambiae females

In order to ascertain the life-span of *A. gambiae* under laboratory conditions, 420 newly emerged females were placed in Gebert's breeding apparatus (Gebert, 1939, *Trans. R. Soc. Med. & Hyg.*, 3 : 353) and kept under observation until their death. They were daily fed with diluted honey contained in a small cotton wool pad. These pads were changed as soon as the slightest growth of moulds appeared on them.

These observations extended from June to September 1957 during which the maximum and minimum temperatures were daily recorded.

The following are the results of these observations.

Longevity No. of days after emergence	*Number of female A. gambiae*	*Longevity No. of days after emergence*	*Number of female A. gambiae*
1	—	21	17
2	—	22	9
3	7	23	13
4	1	24	17
5	1	25	26
6	3	26	5
7	9	27	15
8	13	28	4
9	11	29	11
10	18	30	9
11	8	31	4
12	23	32	3
13	15	33	1
14	43	34	3
15	14	35	6
16	6	36	—
17	27	37	1
18	12	38	3
19	37	39	—
20	23	40	2

Mean longevity : 18.8 days

Mean maximum temperature : 25° C

Mean minimum temperature : 21° C

D.D.T. against A. Gambiæ

A field experiment was carried out early in the year in order to determine the residual effectiveness of D.D.T. upon adults of *A. gambiæ* in huts and cowsheds.

For the purpose of this experiment, a small village was selected at Grand Bay where breeding of *A gambiæ* was known to occur throughout the year.

The interior (walls, partitions and roof) of 9 huts (totalling 19 rooms) and that of 7 cowsheds were sprayed on 1st February, 1957 in the normal manner with a suspension of D.D.T. wettable powder at the rate of about 180 mgm. D.D.T. per sq. ft of surface. The remaining huts and cowsheds of the village were left unsprayed and some of them used as controls for the experiment.

D.D.T. treated and untreated huts and cowsheds were visited about every week for 7 months and live adults of *A. gambiae* resting in each of them were carefully coffected either by flitting (huts) or by hand (cowsheds).

The following table summarizes the results of this experiment :—

TABLE X

Date of Observation	Huts						Cowsheds					
	Treated			Untreated			Treated			Untreated		
	Number of rooms	Number of female A. gambiae collected	Number of female A. gambiae % rooms per month	Number of rooms	Number of female A. gambiae collected	Number of female A. gambiae % rooms per month	Number of cowsheds	Number of female A. gambiae collected	Number of female A. gambiae % cowsheds per month	Number of cowsheds	Number of female A. gambiae collected	Number of female A. gambiae % cowsheds per month
February 7	19	2		19	4		6	—		8	43	
,, 14	19	9		19	3		7	3		7	64	
,, 21	19	3		16	1		7	1		7	88	
,, 27	19	2		16	2		7	2		7	126	
TOTAL FOR FEBRUARY	76	16	21.0	70	10	14.3	27	6	22.2	29	321	1,107.0
March 8	19	—		18	4		7	3		7	80	
,, 15	19	—		17	1		7	8		7	62	
,, 20	19	1		17	3		7	5		7	62	
,, 29	19	2		18	1		7	1		7	69	
TOTAL FOR MARCH ...	76	3	3.9	70	9	12.8	28	17	60.7	28	273	975.0
April 5	19	—		18	—		7	—		7	31	
,, 12	19	—		16	—		7	1		7	48	
,, 17	19	—		18	1		7	2		7	61	
,, 25	19	1		18	3		7	—		7	54	
TOTAL FOR APRIL ...	76	1	1.3	70	4	5.7	28	3	17.9	28	194	692,8

May 3	...	...	19	—		18	2		1	7		7	52	
,, 9	...	...	19	3		16	1		7	—		7	55	
,, 16	...	...	19	—		14	2		7	—		7	43	
,, 22	...	...	19	—		12	1		7	1		7	50	
,, 30	...	...	19	—		16	3		7	—		7	71	
TOTAL FOR MAY	..		95	3	3.2	76	9	11.8	35	2	5.7	35	271	774.3
June 6	...	...	19	—		18	2		7	—		7	70	
,, 11	...	...	19	—		18	2		7	3		7	53	
,, 21	...	...	19	—		18	1		7	5		7	13	
,, 27	...	...	19	—		18	3		7	3		7	36	
TOTAL FOR JUNE	...		76	0	0	72	8	11.1	28	11	39.3	28	172	614.1
July 4	...	...	19	—		18	3		7	2		7	62	
,, 11	...	...	19	—		18	1		7	2		7	90	
,, 18	...	...	19	—		18	2		7	4		7	55	
,, 24	...	...	19	1		18	2		7	2		7	28	
,, 31	...	...	19	1		18	—		7	—		7	25	
TOTAL FOR JULY	...		95	2	2.1	90	8	8.9	35	10	28.5	35	290	828.5
August 7	...	...	19	—		18	—		7	3		7	27	
,, 13	...	...	19	—		16	1		7	1		7	15	
,,	...	...	19	—		16	—		7	—		7	12	
TOTAL FOR AUGUST			57	0	0	50	1	2.0	21	4	19.0	21	54	257.2
TOTAL FOR PERIOD FEB. TO AUG.	...		551	25	4.5	498	49	9.8	202	55	27.2	204	1,575	772.1

These results show that D.D.T. applied as described above at the rate of 180 mgms. per sq. ft. of surface will control adult *A. gambiae* for at least 6 or 7 months after its application in both huts and cowsheds.

A few factors seem, at first sight, to have differently influenced the results of the D.D.T. sprayings in huts and cowsheds.

Cowsheds are known to be one of the most preferred resting places of *A. gambiae* while huts may be classified among the least preferred. This difference in the resting behaviour of *A. gambiae* is mainly due to the different microclimatic conditions prevailing in both habitats. Temperature, (which is one of these conditions) being nearly the same in both huts and cowsheds, should be discarded for the purpose of this discussion. Relative humidity is much higher in cowsheds than in huts and daylight intensity is lower in cowsheds than in huts. These two factors apparently have a direct influence upon the resting behaviour of *A. gambiae*. In order to complete its gonotrophic cycle, this species prefers to rest during the day in shelters well protected from light and where the relative humidity is fairly high i.e., in cowsheds rather than in huts.

Supposing now that an equal number of *A. gambiae* enters simultaneously cowsheds and huts at night, it can be expected that a greater proportion will leave the huts to find more suitable resting places elsewhere while only very few will leave the cowsheds for the same purpose. (Incidentally, this may explain why the population of *gambiae* collected out of doors has been found to be more anthropophilic than zoophilic (see above under " Host preference of *A. gambiae*). It follows therefore that most of the *gambiae* entering treated cowsheds at night, either to feed or to rest, will be killed by the insecticide. In huts, where *gambiae* will enter almost solely to find a blood meal, the majority, after having fed and alighted for a few minutes upon the treated surface will go outside in search for more suitable resting shelters. The lethal effect of the insecticide will consequently manifest itself upon these mosquitoes outside the huts, i.e., after the mosquitoes have reached their natural shelters or before they have had time to take shelter. It is here postulated that the greater part of the *gambiae* population seeking for a shelter after visiting treated huts will succumb at a rate comparable to that affecting individuals resting in cowsheds. The mosquitoes remaining in huts and cowsheds and which were collected alive at the time of the visits, are those in which tolerance to insecticide has developed to a certain degree.

It seems therefore that though the results of the experiments carried out in cowsheds and huts seem to be different, the effect of D.D.T. on the *gambiae* population visiting both habitats is probably very much the same.

Notes on Anopheles gambiae collected in a few resting places

Most of the female *A. gambiae* collected in untreated huts and cowsheds during the course of the D.D.T. experiment at Grand Bay (see above) were examined for ovarian development with the following results (Table XI). Results of similar examination of *A. gambiae* collected in crevices of rough stone walls (see Annual Report for 1956) are also given in this table.

COWSHEDS

No. of gambiae examined	Gonotrophic Stage I	II	III	IV	V
	%	%	%	%	%
1,378	4·3	6·8	20·6	38·6	29·7
			88·9		

HUTS

No. of gambiae examined	Gonotrophic Stage I	II	III	IV	V
	%	%	%	%	%
32	43·7	31·3	15·7	3·1	6·2
			25·0		

ROCK CREVICES

No. of gambiae examined	Gonotrophic Stage I	II	III	IV	V
	%	%	%	%	%
492	8·2	6·1	28·5	46·3	10·9

These results show that 89 per cent of the *gambiae* population collected during daylight hours in cowsheds have reached a condition at which resting has become necessary for the completion of the gonotrophic cycle i.e. for the maturation of the eggs. Practically the same state of affairs is noticeable with the *gambiae* population found in crevices of rough stone walls. Huts, on the other hand, seem to be less attractive to *gambiae* for the completion of its cycle, since only 25 per cent of the collected individuals have reached the condition at which resting is necessary.

It follows therefore that cowsheds and rock crevices can be considered as important resting places for *gambiae* while huts are less favoured by this species.

Susceptibility of Anopheles gambiae to various D.D.T. dosages

In order to determine the dosage of D.D.T. per unit of area at which adult *A. gambiae* could be controlled by this insecticide, tests were carried out (using the Busvine/Nash technique) with 3-day old adult mosquitoes bred from larvae collected in nature from various localities of the Island.

The various concentrations of D.D.T. used in the tests were prepared by diluting a stock solution of D.D.T. in Risella oil with varying volumes of Risella oil and ethylene dichloride. In all cases the volumes of ethylene dichloride was twice that of the total Risella oil contained in each solution. Dosages were calculated on the weight of D.D.T. contained in the various mixtures.

Batches of Whatman filter papers (11 cm. diam.) were impregnated with 1 ml. of solution of each concentration per filter paper. The treated papers were used about 24 hours later. It follows therefore that when using 1 ml. of a 1 per cent D.D.T. solution in a mixture of Risella oil and etylene dichloride to impregnate a filter paper, the amount of D.D.T. present thereon would be equivalent to a deposit 98 mg. per sq. ft.

The following table shows the results of these tests :—

TABLE XII

Susceptibility of Anopheles Gambiae to Various D.D.T. Dosages

Date of test	Locality or area	Sprayed of Unsprayed	*D.D.T. Concentrations in Risella oil / Ethylene dichloride mixtures*																				
			0·25 %			0·5 %			0·75 %			1·0 %			1·5 %			2·0 %			Control		
			Dosages of D.D.T. in mg/sp. ft.																				
			24·5			49·0			73·5			98·0			147·0			196·0					
			No. tested	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*No. tested*	*No. dead*	*Uncorrected mortality %*	*L 50 %*	*LD 90 %*
24.4.57	... various	D.D.T sprayed	—	—	—	100	42	42 0	—	—	—	100	80	80.0	—	—	—	100	96	96·0	100	10	10·0	0 63	1·5
26.4.57	...	,,	,,	—	—	—	14	6	42·8	15	10	66 6	15	12	80.0	15	13	86·7	15	14	93·3	15	1	6·6	0·60	1·5
10.5.57	...	,,	,,	15	3	20·0	15	6	40·0	—	—	—	15	11	73.3	15	13	86·7	15	14	93·3	25	2	8·0	0·68	1·7
16.5.57	...	,,	,,	48	10	26.8	48	21	43·7	48	29	60·4	48	36	75.0	48	43	89·8	42	40	95·2	48	5	10·4	0·65	1·6
3.7.57	...	,,	,,	12	3	25.0	12	5	41·7	12	8	66·7	12	10	83.3	12	12	100·0	—	—	—	12	2	16·7	0·66	1·6
Total		,,	,,	75	16	21·3	189	80	42·3	75	47	62·6	190	149	78·4	90	81	90·0	172	164	95·3	200	20	10	0·64	1·6
1954 (Halcrow)		—	—	—	—	—	—	—	41·0	—	—	—	—	—	75·0	—	—	—	—	—	100·0	—	—	10	0·67	1·7

Mortalities were corrected according to Abbott's formula and log-concentration/probit-mortalities regression lines drawn. The LD_{50} and LD_{90} for each test were graphically estimated. These figures compare well with those found by Halcrow with the Mauritian *gambiae* in 1954 (*fide*, Busvine, 1956, *Nature*, 177 : 533.) and which are quoted in the above table. Halcrow's figures probably refer to dosage of D.D.T. per unit of area and not to susceptibility to D.D.T. as understood by the Busvine/Nash method.

It appears from the above results that D.D.T. sprayed at the rate of 180 mg, per sq. ft., as is presently done in the sprayed areas of the island, is just sufficient to control about 90 per cent of the *gambiae* population resting in houses and cowsheds.

For purposes of comparison with *gambiae* as it occurs in other countries the median lethal concentration for the Mauritian *gambiae* was worked out according to the Busvine/Nash technique as recommended by the World Health Organization and was graphically assessed. It was found to be about 1.8 per cent D.D.T.

It seems that *gambiae* in Mauritius either shows an increase in vigour tolerance or is very slowly building up resistance to D.D.T. It would seem that after about 9 years ' continuous D.D.T. spraying in the island. an LC 50 of 1.8% should rather be attributed to vigour tolerance than to true resistance to D.D.T. However, the susceptibility of *gambia* to D.D.T. should be carefully watched during the next few years.

Susceptibility of Culex fatigans to D.D.T.

Concurrently with the tests described above, the susceptibility of *Culex fatigans* to various dosages of D.D.T. was similarly assessed. Results are given in the following table.

TABLE XIII

Susceptibility of Culex Fatigans to Various D.D.T. Dosages

D.D.T. Concentrations in Risella Oil/Ethylene Dichloride Mixtures

	0·75%			1·0%			1·5%			2·0%			3·0%			4·0%			Control		
	Dosages of D.D.T. in mg./sq. ft.																			*LD 50 %*	*LD 90 %*
	73·5			*98·0*			*147·0*			*196·0*			*294·0*			*392·0*					
Date of test	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*	*No. tested*	*No. dead*	*Uncorrected mortality%*		
28.5.1957	96	0	0	136	3	2·2	96	6	9·2	136	36	26·4	96	77	80·2	80	79	98·7	136	2	1·5	2·3	3·2

Locality or Area: various

Sprayed or Unsprayed: D.D.T. sprayed

It is evident from these results that D.D.T. applied at the rate of 180 mg. per sq. ft., as is presently the case in sprayed areas of the island, will only affect 20 per cent (LD_{20} = 1.8 per cent D.D.T.) of the adult *C. fatigans* resting in houses and cowsheds. This is the reason why complaints are every now and then being received from the public about the "failure" of the D.D.T. sprays to control "mosquitoes" in houses. It should in this connection be stressed that these sprayings are only intended to control the malaria vector, *Anopheles gambiae*, and not *Culex* spp. and this is the case.

Culex fatigans can be considered as being, at present, fairly resistant to D.D.T. Its LC_{50} and LC_{90} estimated on mortalities corrected by Abbott's formula and obtained by the standard Busvine/Nash method (as recommended by the World Health Organization) are about 7.0 per cent D.D.T. and 9,6 per cent D.D.T. respectively.

As spraying with D.D.T. (at the dosage presently used) and probably with other chlorinated hydrocarbon insecticides will not or will very mildly affect *C. fatigans* in houses and cowsheds, it is suggested, in order to bring about an adequate control of this domestic species, that the thorough elimination of the easily accessible breeding sites of this mosquito by either mechanical (e.g. destruction of containers) or other means (e.g. oiling), be systematically carried out by the general public. Notes on the breeding sites, most of which are man-made, have already been given in last year's report.

Laboratory Breeding of house flies (Musca spp.)

Breeding of *Musca* flies was undertaken in order to obtain regular supplies of adults of known age for the biological evaluation of insecticides.

Musca flies were initially collected in slaughter houses and, after selection, were placed in large (12" × 12" × 12") wire gauze cages where they were fed with the following milk-honey mixture :—

Powdered milk	...	...	18 grams.
Honey...	...	...	1 teaspoonful
Water...	...	...	200 ml.

Fifty ml. of the above mixture were fed to the flies twice daily in a small enamelled dish (about $3\frac{1}{2}$ inch diameter) and a nylon gauze float placed on top of the food in order to prevent drowning of the flies and to increase the feeding surface of the dish. This volume of food mixture was sufficient for about 500 flies but it was increased to 100 ml. contained in two dishes as soon as that number was exceeded. As it was noticed that, after two to three days, the egg laying capacity of the fly population of the cages was dropping to a low figure, the food mixture was enriched with "Nesmida" at the rate of 2.5 grms. per 200 ml. of mixture. This addition of "Nesmida" was followed by a marked improvement in the egg production. "Nesmida" is a proprietary product prepared by the Nestle Company, and contains a very high proportion of hydrolysed animal proteins in the form of animoacids.

The egg-laying media consisted in a cotton pad of about 3 inches in diameter by about $\frac{3}{4}$ inch thick soaked in soured adult food and then gently squeezed to remove excess of liquid. These pads in which eggs are readily deposited by the flies were removed from the cages every morning and replaced at once by new ones. They were then kept for a few hours under cover in order to prevent other flies from ovipositing on them and also to give time to the freshly deposited *Musca* eggs to hatch. The pads with their emerging tiny maggots were then transferred to the breeding jars.

Breeding of larvæ was carried out in large confectionery jars of about 2 litres capacity in a media composed as follows :—

	Percentage Composition	*Weight used per breeding jar*
		grams
Wheat Bran	21.8	80.7
Lucerne Meal	8.7	32.2
Malt Extract	0.8	3.0
Brewers' Yeast	0.3	1.1
Water	68.4	253.0
	100.0	370.0

Each jar was loosely filled to about its lower third with the above mixture and left to stand until the following morning when the process of fermentation due to the yeast has reached a certain level. The pads containing the freshly emerged fly maggots were then placed on top of the fermenting breeding media.

After 4 or 5 days, depending upon the temperature, the fly maggots were full-grown when a 2 to 3–inch layer of dry sifted sand was poured on top of the media in order to provide a convenient drier medium for the pupation of the maggots.

Pupation which varied with the temperature, occurred from 7 to 8 days after the hatching of the eggs. The sand was sifted 1 to 2 days after the presumed pupation date and the pupæ placed in emergence cages from which adults of known ages could be collected when required. Those adult flies which were not required for the tests were introduced into the breeding cages where they started laying eggs about 4 days after their emergence from the pupae.

Thanks are due to Mr. H. F. Schoof, Chief of the Biology Section of the U.S. Public Health Service for his kind advice on the breeding of *Musca* flies.

House fly Control with Diazinon impregnated cords

Cotton cords of about 3/32 inch in diameter were treated by immersion in a 20 per cent Diazinon emulsion. They remained in the insecticide for a few minutes after which any excess of emulsion was gently removed so as to avoid undue dripping. They were left to dry for about 2 weeks after which they were installed in the kitchen of Princess Margaret Orthopaedic Hospital at the rate of 30 linear feet per 100 sq. feet of floor area. The cords were suspended vertically from untreated horizontal cords extending from wall to wall near the ceiling. Care was especially taken so that affected flies could not have any chance of falling into food-preparation sites.

The effect of the treatment was determined by making 10 fly grill counts every week at the same time interval so as to avoid any possible variation in the fly behaviour. The four highest counts were averaged and used as a weekly fly index.

The results of this cord-treatment are shown in Figure III.

It follows therefrom that cotton cords of about 3/32 inch in diameter impregnated in a 20 per cent Diazinon emulsion will effectively control *Musca* flies for about 6 to 7 weeks. No complaint has been received of any toxic effect of the treatment upon either the persons frequenting the kitchen or those engaged in the handling of the cords.

It was noticed on several occasions that very numerous dead flies could be collected in the mornings by sweeping the floor of the kitchen ; also, many dead flies could simultaneously be found on the window sills. These flies must have been killed by the insecticide when resting on the cords during the night. It was also noticed that those flies which were recorded during the inspections and in the grill counts came from outside and that these flies are subsequently killed after coming into contact with the treated cords at night. It is quite clear from these observations that the success of chemical control of flies in open buildings depends much upon the density of the fly population outside and that only strict and well-understood sanitation practice will prevent the replacement of that part of that population affected by the insecticide.

Biological evaluation of certain Organo-phosphorus insecticides

The object of these tests was to establish the residual effectiveness of two organo-phosphorous insecticides to house flies when these compounds are sprayed on various surfaces. Samples of Muscatox 30 per cent Wettable Powder and Malatox were obtained through the kindness of their respective agents in Mauritius.

Description of the insecticides

Muscatox—A pale brownish powder containing 30 per cent 3 chloro—4 methyl—1—7 oxycoumarine diethyl thiophosphoric acid.

Malatox—A dark brown liquid containing 5 lbs of Malathion (0,0—dimethyl dithiophosphate of diethyl mercaptosuccinate) per gallon i.e., 50 per cent w/v Malathion.

Surfaces tested

(a) Ply-wood panels plastered with mud consisting of a mixture of fresh cow-dung and clay, as used by farmers for the plastering of the walls of their huts.

(b) White washed (lime) ply-wood panels

(c) Plain, i.e. unpainted, ply-wood panels.

Dosages and rates of application of the insecticides Muscatox 30 per cent Wettable Powder

Dosage : 2 per cent w/v Suspension of Muscatox 30 per cent wettable powder in water Rates of Application : Two rates were used :

(a) One litre of the 2 per cent suspension/10 sq. ft. of surface, thus corresponding to a deposit of 0.6 grms. of active substance/sq. ft. or 6.4 grms./sq. metre.

(b) One litre of the 2 per cent suspension/20 sq. ft. of surface, thus corresponding to a deposit of 0.3 grms. of active substance/sq. ft. or 3.2 grms./sq. metre.

Malatox (50 per cent w/v Malathion)

Dosage : 2 per cent w/v Suspension of Malatox in water.

Rates of Application : two rates were used :—

(a) One gallon of the 2 per cent suspension/500 sq. ft. of surface, thus corresponding to a deposit of 90.8 mgms. Malathion/sq. ft. or 976 mgrms/sq. metre.

(b) One gallon of the 2 per cent suspension/1000 sq. ft of surface. thus corresponding to a deposit of 45.4 mgrms. Malathion/sq. ft or 488 mgrms./sq. metre.

Method of Application of the Insecticides

The insecticides were applied over the various surfaces tc be tested by the usual spraying method using a 2–gallon pressure sprayer fitted with a pressure regulating valve standardized to give a uniform pressure of 40 lbs./sq. inch during the spraying.

Test Insects

Adult health house flies 3—6 days old.

Method of Exposure

For each exposure, house flies were confined in cylindrical wire gauzes cages $2\frac{3}{4}$ in. in diameter by 6 in. high. Thirty to fifty flies were introduced in each cage for each exposure. The number of flies in each cage was dependent upon the total number of flies available on the date of the tests. One end of the cages was exposed to the treated surface to be tested and the other and closed with fine mosquito netting. Food medium consisting of a cotton-wool ball about $1\frac{1}{4}$ inch in diameter saturated with a 5 per cent solution of sugar and honey was available to the test insects throughout each test. The duration of each exposure to the test surface was 24 hours. Mortalities were recorded after that time.

Cages and mosquito netting used during one test were thoroughly washed and dried before the next test.

Results

Mortalities (corrected according to Abbott's formula) recorded after an exposure period of 24 hours on the various test surfaces are given in the following table.

TABLE XIV

House flies Mortalities after exposure to deposits of Muscatox and Malatox on various Surfaces

Week Number	Mean percentage Mortality after exposure to: Muscatox 30% — Mud Surfaces (Rate of Application grms. active substance/sq. ft.) 0.6	0.3	White Washed Surfaces 0.6	0.3	Plain Wood Surfaces 0.6	0.3	All Treated Surfaces 0.6	0.3	Malatox 50% — Mud Surfaces (Rate of Application mgrms. Malathion/Sq. ft.) 90.8	45.4	White Washed Surfaces 90.8	45.4	Plain Wood Surfaces 90.8	45.4	All Treated Surfaces 90.8	45.4	Mean percentage Mortality in controls: Mud Surfaces	White Washed Surfaces	Plain Wood Surfaces	All Control Surfaces
1	99.0	98.0	100.0	100.0	100.0	100.0	99.6	99.3	3.0	1.0	15.1	12.2	42.4	25.1	20.3	10.2	1.0	3.0	1.0	1.6
2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	4.2	0	16.7	12.5	39.6	17.7	20.1	10 0	4.0	4.0	4.0	4.0
3	100.0	97.9	100.0	97.8	100.0	100.0	100.0	98.6	10.4	4.2	12.2	2.0	40.0	12.0	21.0	6.1	4.0	2 0	0	2.0
4	100.0	97.4	94.7	81.2	100.0	100.0	98.2	92.9	1.7	0	0	0	38.3	11.7	13.0	3.1	3.3	6.6	6.6	5.5
5	100.0	100.0	100.0	94.7	100.0	100.0	100.0	98.2	3.2	0	5.6	5.6	9.2	0	5.0	0	5.0	2.5	7.5	5.0
6	100.0	94.9	71.6	71.6	100.0	100.0	90.8	89.2	11.1	0	0	0	13.0	0	8.3	0	10.0	12.5	0	7.3
7	100.0	95.3	56.8	50.1	100.0	100.0	85.7	81.1	3.6	0	0	0	0	0	1.1	0	4.0	7.5	7.5	6.3
8	100.0	97.8	96.8	83.7	100.0	98.0	98.9	93.2	—	—	—	—	—	—	—	—	8.0	6.0	2.0	5.3
9	96.0	94.0	70.0	66.0	100.0	99.0	88.6	86.3	—	—	—	—	—	--	—	—	0	0	0	0
10	100.0	97.8	70.8	50.0	100.0	100.0	90.3	82.8	—	—	—	—	—	—	—	—	2.0	4.0	2.0	2.6
Mean	99.5	97.3	86.3	79.4	100.0	99.8	95.2	92.2	5.6	0	7.8	4.5	26.8	9.6	13.4	4.4	4.1	4.7	3.1	4.0

Discussion

It follows from the above results that no change in the lethal properties of Muscatox 30 per cent Wettable powder on house flies is noticed after 10 weeks of its application upon mud and plain wood surfaces. The toxicity of the insecticide to flies is somewhat affected only after 6 weeks of its application on whitewashed surfaces. No significant differeuce can be found when using Muscatox 30 per cent Wettable powder at the quoted dosage and rates of application on the various surfaces tested.

Malatox 50 per cent on the other hand has lost most of its lethal effect about 1 week after its application on the various surfaces tested. It seems to be a little more effective on plain wood than on whitewash and mud. Mud seems to affect Malatox 50 per cent most considerable but this may be attributed more to absorption than to decomposition.

TABLE I

BIRTHS, STILL-BIRTHS AND DEATHS FROM PRINCIPAL CAUSES IN THE DIFFERENT DISTRICTS DURING THE YEAR 1957

District	*Births*	*Still Births*	*Deaths all causes*	*Malaria*	*Dysentery*	*Tuberculosis*	*Enteritis and Diarrhoea*	*Diseases of the respiratory system*	*Symtoms Senility and ill defined conditions*	*Birth rate*	*Death rate*
Port Louis	4,713	305	1,553	—	4	56	171	271	224	47.4	15.6
Pamplemousses	1,840	107	584	—	5	9	56	70	182	39.0	12.4
Rivière du Rempart ...	2,290	140	558	—	2	7	90	69	160	47.0	11.4
Flacq...	3,063	239	762	—	10	8	72	87	179	45.6	11.4
Grand Port	2,638	212	898	NIL	6	8	107	92	287	43.4	14.8
Savanne	1,858	161	560	—	7	6	38	84	145	45.3	12.2
Plaines Wilhems	6,946	486	2,096	—	16	54	199	369	305	39.7	12.0
Moka	1,243	110	386	—	4	4	37	59	78	38.4	11.9
Black River	682	40	266	—	1	4	23	41	103	43.6	17.0
WHOLE COLONY ...	25,273	1,800	7,603	—	55	156	793	1,132	1,663	43.1	13.0

TABLE II

Statement of the Causes of Death in the Island of Mauritius During the Year 1957

	Causes of death International List 1948 Revision	*Number of Deaths*						*Grand Total*
		General Population			*Indo-Mauritian Population*			
		M	*F*	*Total*	*M*	*F*	*Total*	
A 1.	Tuberculosis of respiratory system ...	40	12	52	56	31	87	139
A 2.	Tuberculosis of meninges and central nervous system	2	1	3	7	4	11	14
A 3.	Tuberculosis of intestines, peritoneum and mesenteric glands ...	—	—	-	1	2	3	3
A 4.	Tuberculosis of bones and joints ...	—	—	—	—	—	—	—
A 5.	Tuberculosis, all other forms ...	—	—	—	—	—	—	—
A 6.	Congenital syphilis	—	—	—	—	—	—	—
A 7.	Early syphilis	—	—	—	—	—	—	—
A 8.	Tabes dorsalis	—	—	—	—	—	—	—
A 9.	General paralysis of insane	—	—	—	—	—	—	—
A 10.	All other syphilis	1	—	1	1	—	1	2
A 11.	Gonococcal infections	—	—	—	—	—	—	—
A 12.	Typhoid fever	1	1	2	1	—	1	3
A 13.	Paratyphoid fever and other Salmonella infections	—	—	—	—	—	—	—
A 14.	Cholera	—	—	—	—	—	—	—
A 15.	Brucellosis (undulent fever) ...	—	—	—	—	—	—	—
A 16.	*(a)* Bacillary dysentery	—	—	—	1	—	1	1
	(b) Amoebiasis	—	—	—	1	—	1	1
	(c) Other unspecified forms of dysentery	15	8	23	16	14	30	53
A 17.	Scarlet fever	—	—	—	—	—	—	—
A 18.	Streptococcal sore throat	—	—	—	—	—	—	—
A 19.	Erysipelas	—	—	—	—	—	—	—
A 20.	Septicaemia and pyaemia	6	12	18	12	10	22	40
A 21.	Diphteria	2	1	3	—	1	1	4
A 22.	Whooping Cough	16	18	34	28	34	62	96
A 23.	Meningococcal infections	—	—	—	—	—	—	1
A 24.	Plague	—	—	—	—	—	—	—
A 25.	Leprosy	—	—	—	—	—	—	—
A 26.	Tetanus	7	4	11	22	10	32	43
A 27.	Anthrax	—	—	—	—	—	—	—
A 28.	Acute poliomyelitis	—	—	—	—	—	—	—
A 29.	Acute infectious encephalitis ...	2	1	3	—	2	2	5
A 30.	Late effects of acute poliomyelitis and acute infectious encephalitis ...	—	—	—	1	—	1	1
A 31.	Small Pox	—	—	—	—	—	—	—
A 32.	Measles	—	—	—	2	—	2	2
A 33.	Yellow Fever	—	—	—	—	—	—	—
A 34.	Infectious hepatitis	—	—	—	—	—	—	—
A 35.	Rabies	—	—	—	—	—	—	—
A 36.	*(a)* Louse-borne epidemic typhus ...	—	—	—	—	—	—	—
	(b) Flea-borne endemic typhus (murine)	—	—	—	—	—	—	—
	(c) Thick-borne epidemic typhus ...	—	—	—	—	—	—	—
	(d) Mite-borne typhus	—	—	—	—	—	—	—
	(e) Other and unspecified typhus ...	—	—	—	—	—	—	—

TABLE II—*continued*

	Causes of death International List 1948 Revision	*Number of Deaths* — *General Population* M	T	Total	*Indo-Mauritian Population* M	T	Total	*Grand Total*
A 37.	*(a)* Vivax malaria (benign tertian)	—	—	—	—	—	—	—
	(b) Malariae malaria (quartan) ...	—	—	—	—	—	—	—
	(c) Falciparum malaria (malignant tertian)	—	—	—	—	—	—	—
	(d) Black water fever	—	—	—	—	—	—	—
	(e) Other add unspecified forms of malaria	—	—	—	—	—	—	—
A 38.	*(a)* Schistosomiasis vesical (S. haematobium)	—	—	—	—	—	—	—
	(b) Schistosomiasis intestinal (S. Mansoni)	—	—	—	—	—	—	—
	(c) Schistosomiasis pulmonary (S. Japonicum)	—	—	—	—	—	—	—
	(d) Other and unspecified Schistosomiasis	—	—	—	—	—	—	—
A 39.	Hydatid disease	—	—	—	—	—	—	—
A 40.	*(a)* Onchocerciasis	—	—	—	—	—	—	—
	(b) Loiasis	—	—	—	—	—	—	—
	(c) Filariasis (bancrofti)	—	—	—	—	—	—	—
	(d) Other filariasis	—	—	—	—	—	—	—
A 41.	Ankylostomiasis	—	1	1	1	—	1	2
A 42.	*(a)* Tapeworm (infestation and other cestode infestations	2	—	2	1	1	2	4
	(b) Ascariasis	—	2	2	—	—	—	2
	(c) Guinea worm (dracunculosis) ...	—	—	—	—	—	—	—
	(d) Other diseases due to helminths	—	—	—	—	—	—	—
A 43.	*(a)* Lymphogranuloma venerum ...	—	—	—	—	—	—	—
	(b) Granuloma inguinale, venereal...	—	—	—	—	—	—	—
	(c) Other and unspecified venereal diseases	—	—	—	—	—	—	—
	(d) Food poisoning infection and intoxication	—	—	—	—	—	—	—
	(e) Relapsing fever	—	—	—	—	—	—	—
	(f) Leptospirosis icterohaemorrhagica (Weil's disease)	—	—	—	—	—	—	—
	(g) Yaws	—	—	—	—	—	—	—
	(h) Chichenpox	—	—	—	—	—	—	—
	(i) Dengue	—	—	—	—	—	—	—
	(j) Trachoma	—	—	—	—	—	—	—
	(k) Sandfly fever	—	—	—	—	—	—	—
	(l) Leishmaniasis	—	—	—	—	—	—	—
	(m) (i) Trypanosomiasis gambiensis	—	—	—	—	—	—	—
	(ii) Trypanosomiasis rhodesiensis	—	—	—	—	—	—	—
	(iii) Other and unspecified trypanosomiasis	—	—	—	—	—	—	—
	(n) Dermatophytosis	—	—	—	—	—	—	—
	(o) Scabies	—	—	—	—	—	—	—
	(p) All other diseases classified as infective and parasitic... ...	—	—	—	—	—	—	—
	TOTAL GROUP I—INFECTIVE AND PARASITIC DISEASES ...	94	61	155	152	109	261	416

TABLE II—*continued*

Causes of death International List 1948 Revision	*Number of Deaths*						
	General Population			*Indo-Mauritian Population*			*Grand Total*
	M	*F*	*Total*	*M*	*F*	*Total*	
A 44. Malignant neoplasm of buccal cavity and pharynx	5	1	6	3	—	3	9
A 45. Malignant neoplasm of oesophagus	1	2	3	—	1	1	4
A 46. Malignant neoplasm of stomach ...	7	10	17	11	6	17	34
A 47. Malignant neoplasm of intestine, except rectum	—	—	—	—	—	—	—
A 48. Malignant neoplasm of rectum ...	2	1	3	—	1	1	4
A 49. Malignant neoplasm of larynx ...	—	—	—	2	—	2	2
A 50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	7	1	8	10	1	11	19
A 51. Malignant neoplasm of breast ...	1	3	4	2	1	3	7
A 52. Malignant neoplasm of cervix utari	—	13	13	—	18	18	31
A 53. Malignant neoplasm of other and unspecified parts of uterus ...	—	1	1	—	—	—	1
A 54. Malignant neoplasm of prostrate ...	1	—	1	—	—	—	1
A 55. Malignant neoplasm of skin ...	—	—	—	1	—	1	1
A 56. Malignant neoplasm of bone and connective tissue	2	2	4	2	2	4	8
A 57. Malignant neoplasm of all other and unspecified	20	14	34	18	12	30	64
A 58. Leukaemia and aleukaemia	1	2	3	2	1	3	6
A 59. Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	3	—	3	3	—	3	6
A 60. Benign neoplasms and neoplasms of unspecified nature	—	—	—	—	—	—	—
TOTAL GROUP II—NEOPLASMS	50	50	100	52	45	97	197
A 61. Nontoxic goiter	—	—	—	—	—	—	—
A 62. Thyretoxicosis with or without goiter	—	—	—	—	—	—	—
A 63. Diabetus mellitus	9	17	26	19	22	41	67
A 64.—*(a)* Beriberi	—	—	—	1	—	1	1
(b) Pellagra	—	—	—	1	2	3	3
(c) Scurvy	1	—	1	—	—	—	1
(d) Other deficiency states ...	14	16	30	38	40	78	108
(e) Kwashiorkor	5	7	12	2	6	8	20
A 66.—*(a)* Asthma	17	10	27	95	66	161	188
(b) All other allergic disorders endocrine, metabolic and blood diseases	3	—	3	—	—	—	3
TOTAL GROUP III—Allergic, endocrine system, metabolic and nutritional diseases	49	50	99	156	136	292	391
A 65.—*(a)* Pernicious and other hypercromic anæmias	—	—	—	—	3	3	3
(b) Iron deficiency anæmias (hyperchromic)	—	—	—	—	1	1	1
(c) Other specified and unspecified anæmias	20	43	63	128	182	310	373
TOTAL GROUP IV Diseases of the blood and blood forming organs	20	43	63	128	186	314	377

TABLE II—*continued*

Causes of death International List 1948 Revision	*Number of Deaths*						
	General Population			*Indo-Mauritian Population*			*Grand Total*
	M	*F*	*Total*	*M*	*F*	*Total*	
A 67. Psychoses	—	—	—	—	1	1	1
A 68. Psychoneuroses and disorders of personality	2	1	3	—	—	—	3
A 69. Mental deficiency	—	—	—	—	—	—	—
TOTAL GROUP V—Mental, psychoneurotic and personality disorders	2	1	3	—	1	1	4
A 70. Vascular lesions affecting central nervous system	72	59	131	134	97	231	362
A 71. Nonmeningococcal meningitis ...	12	3	15	11	19	30	45
A 72. Multiple sclerosis	—	—	—	—	—	—	—
A 73. Epilepsy	—	7	7	7	2	9	16
A 74. Inflammatory diseases of eye ...	—	—	—	—	—	—	—
A 75. Cataract	—	—	—	—	—	—	—
A 76. Glaucoma	—	—	—	—	—	—	—
A 77.—*(a)* Otitis externa	—	—	—	—	—	—	—
(b) Otitis media and mastoiditis ...	—	—	—	—	1	1	1
(c) Other inflammatory diseases of ear	—	—	—	—	—	—	—
A 78. *(a)* All other diseases and conditions of eye	—	—	—	—	—	—	—
(b) All other diseases of the nervous system and sense organs ...	1	1	2	1	4	5	7
TOTAL GROUP VI – Diseases of the nervous system and sense organs ...	85	70	155	153	123	276	431
A 79. Rheumatic fever	—	—	—	1	—	1	1
A 80. Chronic rheumatic heart disease ...	—	1	1	1	—	1	2
A 81. Arteriosclerotic and degenerative heart disease	66	54	120	167	115	282	471
A 82. Other diseases of heart	19	21	40	34	27	61	101
A 83. Hypertension with heart disease ...	—	—	—	3	—	3	3
A 84. Hypertension without mention of heart	17	10	27	34	19	53	80
A 85. Diseases of arteries	5	8	13	5	5	10	23
A 86. Other diseases of circulatory system	3	2	5	5	2	5	10
TOTAL GROUP VII—Diseases of the circulatory system	110	96	206	248	168	416	622
A 87. Acute upper respiratory infections ...	—	1	1	—	—	—	—
A 88. Influenza	42	41	83	62	74	136	219
A 89. Lobar pneumonia	1	4	5	6	2	8	13
A 90. Bronchopneumonia	51	44	95	81	74	155	250
A 91. Primary atypical other and unspecified pneumonia	27	28	55	56	31	87	142
A 92. Acute bronchitis	9	7	16	23	15	38	54
A 93. Bronchitis, chronic and unqualified	46	45	91	120	106	226	317
A 94. Hypertrophy of tonsils and adenoids	—	—	—	—	—	—	—
A 95. Empyema and abcess of lung ...	4	—	4	3	1	4	8
A 96. Pleurisy...	5	2	7	6	1	7	14
A 97. *(a)* Pneumoconiosis	—	—	—	—	—	—	—
(b) All other respiratory diseases ...	19	11	30	52	32	84	114
TOTAL GROUP VIII—DISEASES OF THE RESPIRATORY SYSTEM ...	204	183	387	408	337	745	1,132

TABLE II—*continued*

Causes of death International List 1948 Revision	*Number of Deaths*						
	General Population			*Indo-Mauritian Population*			*Grand Total*
	M	*F*	*Total*	*M*	*F*	*Total*	
A 98. *(a)* Dental Carics	—	—	—	—	—	—	—
(b) All other diseases of teeth and supporting structures	1	—	1	—	—	—	1
A 99. Ulcer of stomach	—	—	—	9	—	9	9
A 100. Ulcer of duodenum	2	—	2	8	3	11	13
A 101. Gastritis and duodenitis	—	—	—	3	3	6	6
A 102. Appendicitis	—	1	1	1	1	2	3
A 103. Intestinal obstruction and hernia ...	6	4	10	13	5	18	28
A 104. *(a)* Gastro-enteritis and colitis between 4 weeks and 2 years	117	86	203	194	182	376	579
(b) Gastro-enteritis and colitis, ages 2 years and over	31	30	61	56	76	132	193
(c) Chronic enteritis and ulcerative colitis	4	1	5	6	10	16	21
A 105. Cirrhosis of liver	8	1	9	8	6	14	23
A 106. Cholelithiasis and cholecystitis ...	—	—	—	—	—	—	—
A 107. Other diseases of digestive system ...	29	17	46	50	35	85	131
TOTAL GROUP IX—DISEASES OF THE DIGESTIVE SYSTEM ...	198	140	338	348	321	669	1,007
A 108. Acute nephritis	—	2	2	1	3	4	6
A 109. Chronic, other and unspecified nephritis	19	18	37	28	23	51	88
A 110. Infections of kidney	—	—	—	—	—	—	—
A 111. Calculi of urinary system	—	—	—	—	—	—	—
A 112. Hyperplasis of prostate	1	—	1	—	—	—	1
A 113. Diseases of breast	—	—	—	—	—	—	—
A 114. *(a)* Hydrocele	—	—	—	1	—	1	1
(b) Disorders ot menstruation ...	—	1	1	—	—	—	1
(c) All other diseases of the genito-urinary system	2	—	2	5	3	8	10
TOTAL GROUP X—Diseases of the genito-urinary system	22	21	43	35	29	64	107
A 115. Sepsis of pregnancy, child-birth and the puerperium	—	3	3	—	8	8	11
A 116. Toxæmias of pregnancy and the puerperium	—	1	1	—	3	3	4
A 117. Hæmorrhage of pregnancy and childbirth	—	—	—	—	1	1	1
A 118. Abortion without mention of sepsis or toxæmia	—	—	—	—	—	—	—
A 119. Abortion with sepsis	—	—	—	—	—	—	—
A 120. *(a)* Other complications of pregnancy, childbirth and the puerperium	—	16	16	—	45	45	61
(b) Delivery without complications	—	—	—	—	—	—	—
TOTAL GROUP XI—Deliveries and complication of pregnancy, childbirth and the puerperium ...	—	20	20	—	57	57	77

TABLE II—*continued*

Causes of death International List 1948 Revision	*Number of Deaths*						
	General Population			*Indo-Mauritian Population*			*Grand Total*
	M	*F*	*Total*	*M*	*F*	*Total*	
A 121. Infections of skin and subcutaneous tissue	2	1	3	3	6	9	12
TOTAL GROUP XII—Diseases of the skin and cellular tissue	2	1	3	3	6	9	12
A 122. Arthritis and spondylitis	—	—	—	—	—	—	—
A 123. Muscular rheumatism and rheumatism unspecified	12	1	13	23	4	27	40
A 124. Osteomyelitis and periostitis ...	—	—	—	—	1	1	1
A 125. Ankyolosis and acquired musculoskeletal deformities	—	—	—	—	—	—	—
A 126 *(a)* Chronic ulcer of skin (including tropical ulcer)	—	—	—	—	—	—	—
(b) All other diseases of the skin ...	—	—	—	—	—	—	—
(c) All other deseases of musculoskeleted system	—	—	—	—	—	—	—
TOTAL GROUP XIII—DISEASES OF THE BONES AND ORGANS OF MOVEMENT ...	12	1	13	23	5	28	41
A 127. Spina bifida and meningocele ...	—	3	3	1	2	3	6
A 128. Congenital malformations of circulatory system	1	—	1	2	1	3	4
A 129. All other congenital malformations	3	3	6	8	4	12	18
TOTAL GROUP XIV—CONGENITAL MALFORMATIONS	4	6	10	11	7	18	28
A 130. Birth injuries	3	—	3	3	1	4	7
A 131. Postnatal asphyxia and atelectasis ...	31	13	44	31	18	49	93
A 132. *(a)* Diarrhoea of newborn (under 4 weeks)	5	2	7	16	8	24	31
(b) Ophthalmia neonatorum ...	—	—	—	—	—	—	—
(c) Other infections of newborn ...	—	—	—	—	—	—	—
A 133. Haemoletic disease of newborn ...	—	2	2	—	1	1	3
A 134. All other defined diseases of early infancy	20	18	38	38	25	63	101
A 135. All defined diseases peculiar to early infancy, and immaturity unqualified	76	61	127	279	230	509	636
TOTAL GROUP XV—DISEASES PECULIAR TO EARLY INFANCY	135	96	231	367	283	650	881
A 136, Senility without mention of psychosis	40	85	25	76	155	231	356
A 137. *(a)* Pyrexia of unknown origin ...	17	29	46	70	94	164	210
(b) Observation, without need for further medical care	—	—	—	—	—	—	—
(c) All other ill-defined causes of morbidity	193	173	365	394	337	731	1,096
TOTAL GROUP XVI—SYMPTOMS SENILITY AND ILL-DEFINED CONDITIONS ...	250	287	537	540	586	1,126	1,663

TABLE II—*continued*

Causes of death International List 1948 Revision	*Number of Deaths*						
	General Population			*Indo-Mauritian Population*			*Grand Total*
	M	*F*	*Total*	*M*	*F*	*Total*	
AE 138. Motor vehicle accidents	15	2	17	44	14	58	75
AE 139. Other transport accidents	—	—	—	—	—	—	—
AE 140. Accidental poisoning	—	1	1	1	—	1	2
AE 141. Accidental falls	—	—	—	—	—	—	—
AE 142. Accident caused by machinery ...	—	—	—	—	—	—	—
AE 143. Accident caused by fire and explosion of combustible material ...	—	—	—	—	—	—	—
AE 144. Accidents caused by hot substance corrosive liquid, steam and radiation	5	3	8	15	19	34	42
AE 145. Accident caused by firearm ...	—	—	—	—	—	—	—
AE 146. Accidental drowning and submersion	16	1	17	23	9	32	49
AE 147. (*a*) Foreign body entering eye and adnexa	—	—	—	—	—	—	—
(*b*) Foreign body entering other orifice	—	—	—	—	—	—	—
(*c*) Accidents caused by bites and stings of venomous animals ...	—	—	—	—	—	—	—
(*d*) Other accidental causes by animals	—	—	—	—	—	—	—
(*e*) All other accidental causes ...	3	1	4	3	3	6	10
AE 148. Suicide and self-inflicted injury ...	6	3	9	23	3	26	35
AE 149. Homicide and injury purposely inflicted by other persons (not in war)	2	—	2	2	—		24
AE 150. Injury resulting from operations of war	—	—	—	—	—	—	—
TOTAL GROUP XVII—ACCIDENTS, POISONINGS AND VIOLENCE ...	47	11	58	111	48	159	217
TOTAL ALL CAUSES ...	1,284	1,137	2,421	2,735	2,447	5,182	7,603

TABLE III

STATEMENT SHOWING THE TOTAL NUMBER OF DEATHS AND PRINCIPAL CAUSES OF DEATH IN THE WHOLE COLONY DURING THE PAST TWO YEARS

Causes of Death	*1956*	*1957*
Total deaths from all causes	6,739	7,603
Malaria :—		
Number	—	—
Rate per 1,000	—	—
Dysentery :—		
Number	68	55
Rate per 1,000	.12	.09
Enteritis :—		
Number	660	793
Rate per 1,000	1.16	1.35
Influenza :—		
Number	52	219
Rate per 1,000	.09	.37
Bronchitis :—		
Number	326	371
Rate per 1,000	.57	.63
Pneumonia :—		
Number	280	405
Rate per 1,000	.49	.69
Tuberculosis :—		
Number	145	156
Rate per 1,000	.25	.27
Diseases of the heart :—		
Number	498	622
	.88	1.06
Diseases of early infancy :—		
Number	867	881
Rate per 1,000 live births	34.81	34.86
Deliveries and complications of pregnancy, childbirth and the puerperium :—		
Number	57	77
Rate per 1,000 total births*...	2.13	2.84

*i.e. live births and still births.

TABLE IV

Abstract of Deaths at Different Ages in the Several Classes of the Population during the Year 1957

Age	Males			Females			Grand Total
	General Population	*Indo-Mauritian Population*	*Total*	*General Population*	*Indo-Mauritian Population*	*Total*	
Under 3 months	175	479	654	127	371	498	1,152
3 months and under 6 months ...	39	108	147	36	116	152	299
6 months and under 1 year ...	82	134	216	95	135	230	446
1 year and under 2 years ...	107	135	242	96	154	250	492
2 years and under 3 years ...	49	79	128	42	110	152	280
3 years and under 4 years ...	19	56	75	31	67	98	173
4 years and under 5 years ...	12	38	50	14	36	50	100
5 years and under 10 years ...	19	65	84	16	74	90	174
10 years and under 15 years ...	7	26	33	15	27	42	75
15 years and under 20 years ...	11	42	53	15	57	72	125
20 years and under 25 years ...	14	39	53	23	75	98	151
25 years and under 30 years ...	25	42	67	31	80	111	178
30 years and under 35 years ...	29	61	90	32	67	99	189
35 years and under 40 years ...	32	93	125	27	61	88	213
40 years and under 45 years ...	50	126	176	29	84	113	289
45 years and under 50 years ...	75	142	217	24	80	104	321
50 years and under 55 years ...	92	193	265	42	84	126	411
55 years and under 60 years ...	104	215	319	41	112	153	472
60 years and under 65 years ...	95	206	301	58	130	188	489
65 years and under 70 years ...	91	213	304	63	167	230	534
70 years and under 75 years ...	71	133	204	72	136	208	412
75 years and under 80 years ...	50	62	112	61	105	166	278
80 years and under 85 years ...	27	28	55	75	78	153	208
85 years and under 90 years ...	5	12	17	42	31	73	90
90 years and under 95 years ...	3	4	7	23	5	28	35
95 years and over	1	3	4	7	5	12	16
Ages not stated	—	1	1	—	—	—	1
TOTAL	1,784	2,735	4,019	1,137	2,447	3,584	7,603

TABLE V

SHIPPING MOVEMENTS—PORT LOUIS—1957

Month	No. of incoming vessels	No. admitted to Pratique on arrival	No. arriving from infected Ports	No. of crew examined	No. of Passengers		No. of passengers under surveillance	No. of vessels admitted to pratique after disinfection of linen and effects of Passengers and crew	No. of vessels admitted to pratique after fumigation of cargo	No. of vessels detained for purposes of disinfection on account of Plague, cholera and small pox
					Landing	Tourist				
January	34	29	5	2,262	197	1,998	—	4	10	—
February	29	25	4	2,916	323	2,501	—	8	4	—
March	24	21	3	1,997	381	1,551	—	8	1	—
April	33	30	3	3,382	236	1,564	—	5	6	—
May	26	25	1	1,745	323	976	—	3	4	—
June	30	26	4	2,068	180	1,372	—	12	9	—
July	20	17	3	1,737	395	1,871	—	5	4	—
August	28	22	6	2,023	307	662	—	14	5	—
September	30	24	6	1,957	360	835	—	10	3	—
October	36	26	10	2,382	344	556	—	13	5	—
November	30	22	8	1,782	145	661	—	7	2	—
December	33	26	7	2,509	739	597	—	9	6	—
	353	293	60	26,760	3,930	15,144	—	98	59	—

TABLE VI

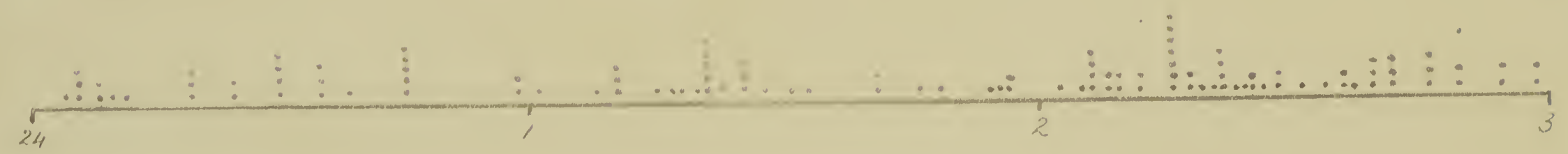
SUMMARY OF INSPECTIONS PERFORMED BY THE HEALTH INSPECTORATE—YEAR 1957

Districts or Sections	*Examination of foodstuffs*	*Samples of foodstuffs submitted for analysis*	*Seizures*	*Inspection of food premises*	*Visits to Slaughter houses*	*Visits to Markets*	*Inspection of Schools*	*Inspection of offensive trades*	*Inspection of other premises*	*Inspection on account of new buildings*	*Inspection in connection with mosquito control*	*Inspection in connection with notifiable diseases and contacts*	*Inspection in connection with Night Soil Service*	*Inspection in connection with Scavenging Service*	*Disinfections carried out*	*No. of notices, orders and requests served*	*Cremations attended to*
Port Louis District ...	249	85	12	10,438	—	5	123	7	10,622	687	10,020	31	356	356	43	685	30
Pamplemousses District.	1,855	81	2	759	—	—	284	77	10,162	728	11,282	12	314	722	6	716	119
R. du Rempart District..	938	63	9	781	—	—	116	14	6,243	344	4,102	20	—	431	6	714	84
Flacq—North Section ...	220	11	15	606	104	365	87	45	4,616	330	4,616	45	365	365	10	572	98
Flacq—South Section ...	223	13	—	350	76	—	61	6	4,190	152	2,122	22	500	100	5	320	—
Mahebourg Section ...	623	30	31	480	338	317	78	2	3,489	92	2,672	15	120	626	16	326	28
Rose Belle Section ...	1,155	31	—	488	—	—	177	—	5,053	115	4,853	60	—	752	14	215	59
Savanne District ...	648	34	20	731	155	—	51	180	5,899	341	5,881	7	222	365	7	298	52
Curepipe Section ...	1,832	8	—	1,558	25	81	117	18	11,158	450	360	10	3,410	365	3	139	28
Vacoas Section	193	19	9	784	—	365	89	—	666	201	4,593	30	185	365	7	299	39
Rose Hill Section ...	1,483	29	2	1,483	17	113	38	2	3,774	507	3,744	75	365	365	15	305	94
Moka District	57	37	2	441	—	365	96	11	4,372	126	4,372	18	104	365	4	724	56
Black River District ...	151	24	1	148	—	—	94	28	4,924	142	392	5	55	300	5	517	6
TOTAL ...	9,627	465	103	19,047	715	1,611	1,411	390	75,168	1,218	59,010	350	5,996	5,477	141	6,030	693

2547/4/59—320

FIGURE 1

Individual biting times of A. gambiae in a single night
Times are to the nearest minute
Each dot represents a single capture



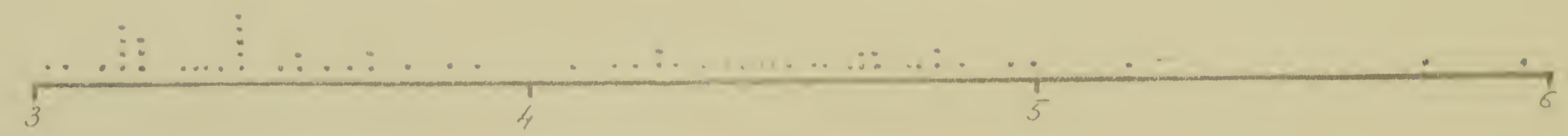


FIGURE II

Individual biting times of A. gambiae in a single night
Times are to the nearest minute
Each dot represents a single capture

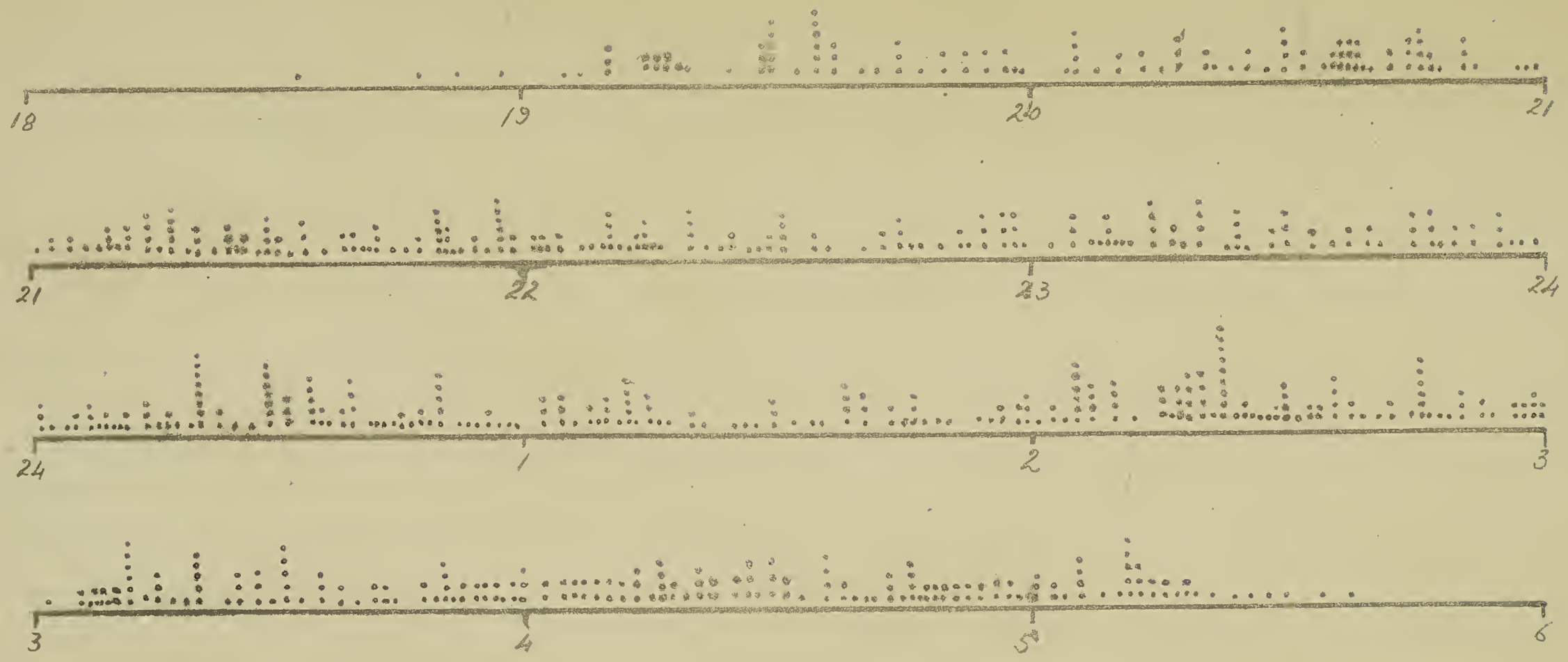
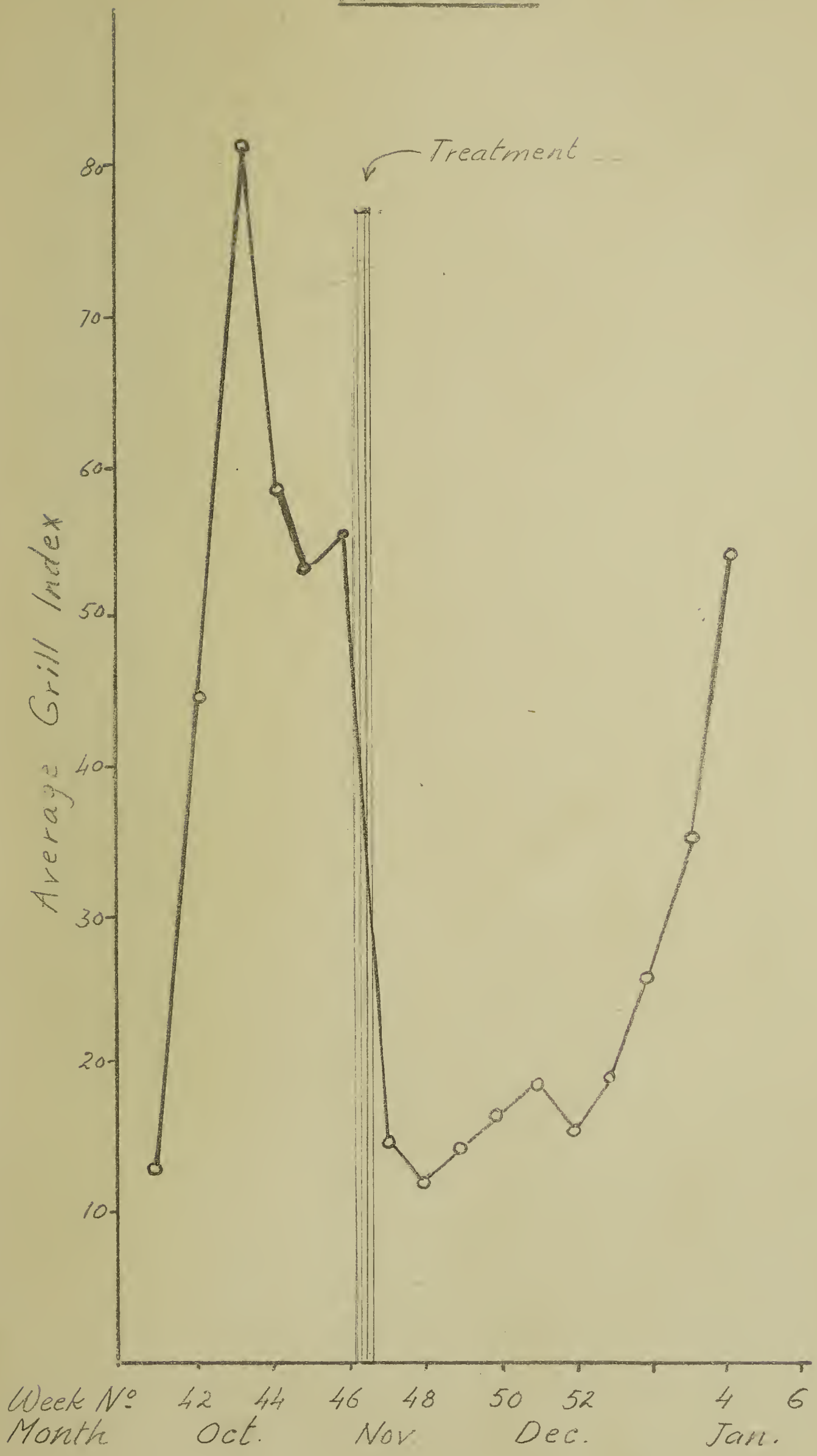


FIGURE III


Treatment
80
70
60
50
40
30
20
10
Average Grill Index
Week No. 42 44 46 48 50 52 4 6
Month Oct. Nov Dec. Jan.